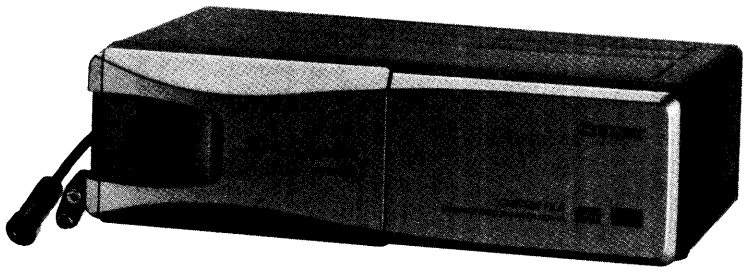
CDX-91

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



Model Name Using Similar Mechanism	CDX-U404/U606
CD Mechanism Name	KSM-400AAM
Optical Pick-Up Block Name	KSS-400A

SPECIFICATIONS

System	Compact disc digital audio system
Laser Diode Properties	Material: GaAlAs Wavelength: 780nm Emission Duration: Continuous Laser out-put Power: Less than 44.6 μW* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	5 – 20,000 Hz
Wow and flutter	Below measurable limit
Signal-to-noise ratio	102 dB
Outputs	Optical digital output BUS control output (8 PIN) Analog audio output (RCA PIN)
Current drain	800 mA (CD playback) 800 mA (during loading or ejecting a disc)
Operating temperature	–10°C to 55°C (14°F to 131°F)
Dimensions	Approx. 304 × 89 × 190 mm (12 × 3 5/8 × 7 1/2 in.) (w/h/d) not incl. projecting parts and controls
Mass	Approx. 2.5 kg (5 lb. 8 oz.)
Power requirement	12 V DC car battery (negative ground)
Supplied accessories	Disc magazine (1) Mounting hardware (1 set) BUS cable (1) RCA pin cord (1)

Design and specifications subject to change without notice.

MICROFILM

COMPACT DISC CHANGER

SONY®

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*
  * This output is the value measured at a distance of 200 mm from the objective lens surfase on the Optical Pick-up Block.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radistion exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SUPPLEMENT-1

SUPPLEMENT-2

SERVICING NOTE

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ℃ during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

This section is extracted from instruction manual.

SECTION 1
GENERAL

Installation Installation Instalación 安裝

Precautions

- Choose the mounting location carefully, observing the following:
  — The fuel tank should not be damaged by the tapping screws.
  — There should be no wire harnesses or pipelines under the place where you are going to install the unit.
  — The spare tire, tools or other equipment in or under the trunk should not be interfered with or damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.

Précautions

- Choisir l'emplacement de montage en tenant compte des observations suivantes:
  — Vérifier que le réservoir d'essence ne risque pas d'être endommagé par les vis taraudeuses.
  — Il ne doit pas y avoir de faisceau de fils ou de tuyaux à l'emplacement du montage.
  — Vérifier que l'appareil ou les vis ne risquent pas d'endommager ou de gêner la roue de secours, les outils, ou tout autre objet dans le coffre.
- Pour garantir la sécurité de l'installation, utiliser uniquement le matériel de montage fourni.

Precauciones

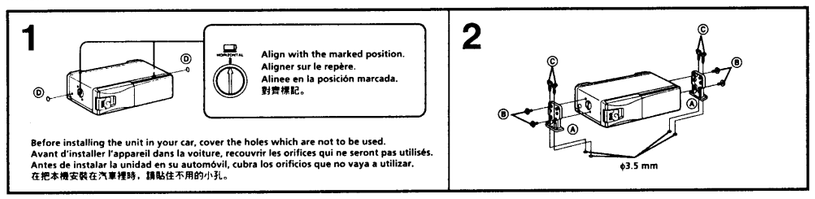
- Elija cuidadosamente el lugar de montaje, teniendo en cuenta lo siguiente:
  — El depósito de combustible no deberá dañarse con los tornillos autoroscantes.
  — No deberá haber mazos de conductores ni tubos debajo del lugar donde vaya a instalar la unidad.
  — La rueda de repuesto, las herramientas, u otros equipos situados dentro o debajo del portaequipajes no deberán verse interferidos ni dañados por los tornillos ni por la propia unidad.
- Para realizar una instalación segura, emplee solamente la ferretería de montaje suministrada.

使用前須知事項

- 行裝以前請參照下列事項，存細選擇安裝位置：
  — 不可讓自攻螺絲釘傷及油箱。
  — 唱片轉換器不可安裝在電線配線或瓦斯管上面。
  — 唱片轉換器安裝位置或螺絲等不可妨礙或觸及備用輪胎、汽車修理工具或其他行車零件。
- 爲保安全及牢固起見，安裝時請使用附屬的安裝用道具。

How to Install the Unit

Horizontal installation


1
Align with the marked position.
Aligner sur le repère.
Alinee en la posición marcada.
對齊標記。
Before installing the unit in your car, cover the holes which are not to be used.
Avant d'installer l'appareil dans la voiture, recouvrir les orifices qui ne seront pas utilisés.
Antes de instalar la unidad en su automóvil, cubra los orificios que no vaya a utilizar.
在把本機安裝在汽車裡時，請貼住不用的小孔。
2
ϕ3.5 mm

Installation de l'appareil

Installation horizontale

Forma de instalar la unidad

Instalación horizontal

如何安裝

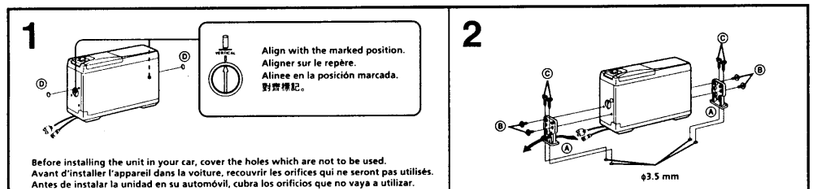
水平裝法

Vertical installation

Installation verticale

Instalación vertical

垂直裝法


1
Align with the marked position.
Aligner sur le repère.
Alinee en la posición marcada.
對齊標記。
Before installing the unit in your car, cover the holes which are not to be used.
Avant d'installer l'appareil dans la voiture, recouvrir les orifices qui ne seront pas utilisés.
Antes de instalar la unidad en su automóvil, cubra los orificios que no vaya a utilizar.
在把本機安裝在汽車裡時，請貼住不用的小孔。
2
ϕ3.5 mm

Suspended installation

When the unit is to be installed under the rear tray etc. in the trunk room, make sure that the following provisions are made.

- Choose the mounting location carefully so that the unit can be installed horizontally.
- Make sure that the unit does not hinder the movement of torsion bar spring etc. of the trunk lid.

Installation suspendue

Si l'appareil doit être installé sous la plage arrière dans le coffre par exemple, observer les précautions suivantes.

- Bien choisir l'emplacement pour pouvoir installer l'appareil à l'horizontale.
- Vérifier que l'appareil ne gêne pas les mouvements du ressort de fermeture du coffre, entre autres.

Instalación suspendida

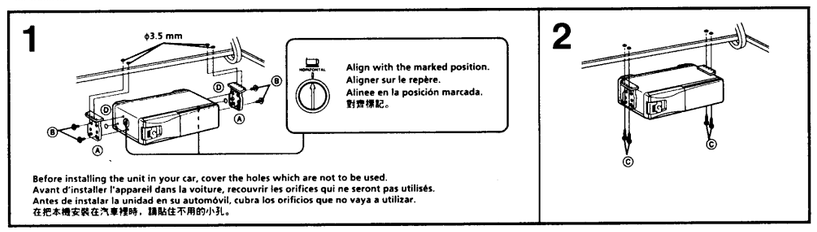
Cuando desee instalar la unidad debajo de la bandeja trasera, etc. en el interior del portaequipajes, tenga en cuenta lo siguiente:

- Elija cuidadosamente el lugar de montaje de forma que la unidad pueda instalarse horizontalmente.
- Cerciórese de que la unidad no impida el movimiento del resorte de la barra de torsión, etc., de la tapa del portaequipajes.

懸掛裝法

要把本機安裝子汽車行李箱裡的後平台上時，請注意下列事項：

- 須水平安裝。
- 不可妨礙汽車後蓋彈簧扭桿的起落。


1
ϕ3.5 mm
Align with the marked position.
Aligner sur le repère.
Alinee en la posición marcada.
對齊標記。
Before installing the unit in your car, cover the holes which are not to be used.
Avant d'installer l'appareil dans la voiture, recouvrir les orifices qui ne seront pas utilisés.
Antes de instalar la unidad en su automóvil, cubra los orificios que no vaya a utilizar.
在把本機安裝在汽車裡時，請貼住不用的小孔。
2

Inclined installation

After installing the unit, align the dial with one of the marks so that the arrow comes as close to a vertical position as possible.

Installation inclinée

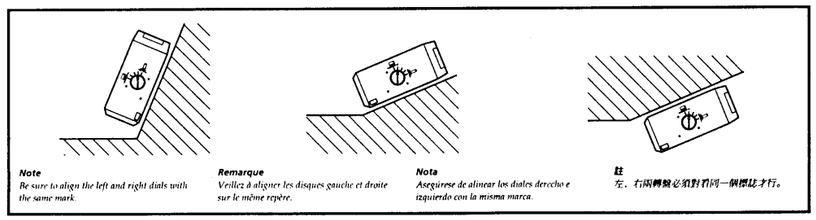
Après avoir installé l'appareil, alignez le disque sur l'un des repères afin que la flèche soit aussi proche que possible de la position verticale.

Instalación sobre una superficie inclinada

Después de instalar la unidad, alinee el dial con una de las marcas, de forma que la flecha quede orientada en posición vertical tanto como sea posible.

傾斜裝法

安裝好以後，請把轉盤設定在箭頭剛好能成垂直狀態的標誌之處。



Note
Be sure to align the left and right dials with the same mark.

Remarque
Veillez à aligner les disques gauche et droite sur le même repère.

Nota
Asegúrese de alinear los dials derecho e izquierdo con la misma marca.

註
左，右兩轉盤必須對看同一個標誌才行。

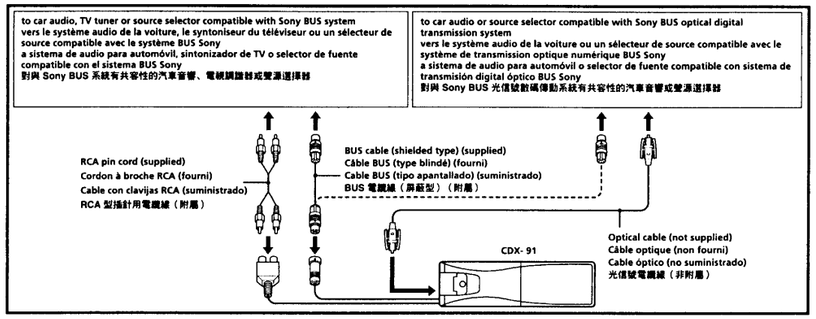
Connections Connexions Conexiones 線路之連接

For details, refer to the Installation/Connections manual of each product.

Pour plus de détails, consulter le manuel d'installation/connexions de chaque produit.

Con respecto a los detalles, consulte el manual de instalación/conexiones de cada producto.

詳細請參看各機件的「安裝／線路之連接」使用說明書。


to car audio, TV tuner or source selector compatible with Sony BUS system
vers le système audio de la voiture, le syntoniseur du téléviseur ou un sélecteur de source compatible avec le système BUS Sony
a sistema de audio para automóvil, sintonizador de TV o selector de fuente compatible con el sistema BUS Sony
對與 Sony BUS 系統有共容性的汽車音響、電視調諧器或聲源選擇器
to car audio or source selector compatible with Sony BUS optical digital transmission system
vers le système audio de la voiture ou un sélecteur de source compatible avec le système de transmission optique numérique BUS Sony
a sistema de audio para automóvil o selector de fuente compatible con sistema de transmisión digital óptico BUS Sony
對與 Sony BUS 光信號數碼傳動系統有共容性的汽車音響或聲源選擇器
RCA pin cord (supplied)
Cordon à broche RCA (fourni)
Cable con clavijas RCA (suministrado)
RCA 型插針用電纜線（附屬）
BUS cable (shielded type) (supplied)
Câble BUS (type blindé) (fourni)
Cable BUS (tipo apantallado) (suministrado)
BUS 電纜線（屏蔽型）（附屬）
CDX- 91
Optical cable (not supplied)
Câble optique (non fourni)
Cable óptico (no suministrado)
光信號電纜線（非附屬）

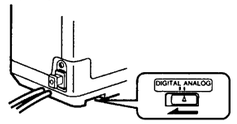
Connection of the Optional Optical Cable (RC-98 etc.)

Connexion du câble optique optionnel (RC-98 etc.)

Conexión de un cable óptico RC-98, etc. (no suministrado)

另購光信號電纜線連接（如 RC-98 等）

1 Set the DIGITAL/ANALOG switch on the rear of the CD changer to DIGITAL.
Réglez le sélecteur DIGITAL/ANALOG à l'arrière du changeur de CD sur DIGITAL.
Ajuste el selector DIGITAL/ANALOG, situado en la parte posterior del cambiador de discos compactos, en la posición DIGITAL.
將 CD 轉換器後側的 DIGITAL/ANALOG 開關設定爲 DIGITAL。



Notes
- *This switch is factory-set to the ANALOG position.*
- *After changing the position of the switch, be sure to press the reset button on the master unit.*
- *Improper setting of the switch may prevent any sound to be reproduced even when the CD changer is activated.*

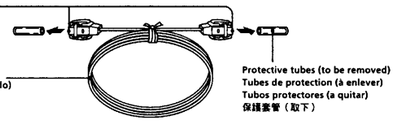
Remarques
- *Ce sélecteur est préréglé en usine sur la position ANALOG (analogique).*
- *Quand la position du sélecteur a été changée, appuyer sur la touche de réinitialisation sur l'appareil principal.*
- *Un réglage incorrect du sélecteur peut empêcher la reproduction du son même quand le changeur de CD fonctionne.*

Notas
- *Este selector ha sido ajustado en fábrica a ANALOG.*
- *Después de haber cambiado la posición del selector, cerciórese de presionar el botón de reposición de la unidad principal.*
- *El ajuste inadecuado del selector podría impedir la reproducción de sonido incluso aunque el cambiador de discos compactos estuviese activado.*

註
- *此開關在工廠時被設定於「ANALOG」（類比信號）之處。*
- *改變本開關的位置以後，必須按壓主機的重調鍵。*
- *本開關設定不正確的話，即以碟片轉換器操作時，會使聲音不均衡。*

2

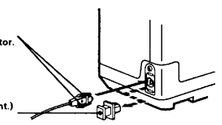
Do not touch the coupler parts.
Ne pas toucher les pièces du coupleur.
No toque las partes de acoplamiento.
不可觸及連接插頭部分



3

When you wish to disconnect the cable, simply push both sides of the connector.
Pour débrancher le câble, appuyer simplement sur les deux côtés du connecteur.
Cuando desee desconectar el cable, simplemente presione ambos lados del conector.
要拔下電纜線時，捻壓插頭兩側拔出即可。

Protective cap (Remove and retain it for future use.)
Cache de protection (L'enlever et le conserver en cas de besoin ultérieurement.)
Tapón protector (Quítelo y guárdelo para poder utilizarlo en el futuro.)
保護蓋（取下並妥善保存以備將來之用）



Note
Remove the protective cap, and firmly plug in the connector.

Remarque
Retirez le bouchon de protection et enfichez correctement le connecteur.

Nota
Retire la tapa protectora y enchufe firmemente en el conector.

註
拆下保護蓋，將插頭牢固地插入連接器中。

Notes on the optical cable
Observe the following when connecting the cable.
- *Do not force to bend the cable too much so that the bent part (arc) becomes less than 5 cm in radius. If you do so, sound may not be reproduced.*
- *Make sure that the cable does not get squeezed or constricted in any way by objects around it.*
- *Never let the coupler parts of the connectors get scratched or become contaminated with dirt.*
- *If not connected to a car audio compatible with Sony BUS optical digital transmission system, reinstall the protective cap to its original position.*
- *Use an optical cable designed for Sony car audio systems and suitable for this CD changer.*

Remarques sur le câble optique
Lors de la connexion du câble.
- *Ne pas forcer sur le câble en le pliant et vérifier que l'arc (la partie courbée) ne fasse pas moins de 5 cm de rayon, sinon le son risque d'être inaudible.*
- *Vérifier que le câble n'est pas coincé ni écrasé par des objets.*
- *Protéger les pièces du coupleur des égratignures et de la saleté.*
- *Si le câble n'est pas raccordé à un système audio de voiture compatible avec le système de transmission optique numérique BUS Sony, réinstallez le bouchon de protection dans sa position originale.*
- *Utilisez un câble optique conçu pour les systèmes audio pour voiture Sony et compatible avec ce changeur de CD.*

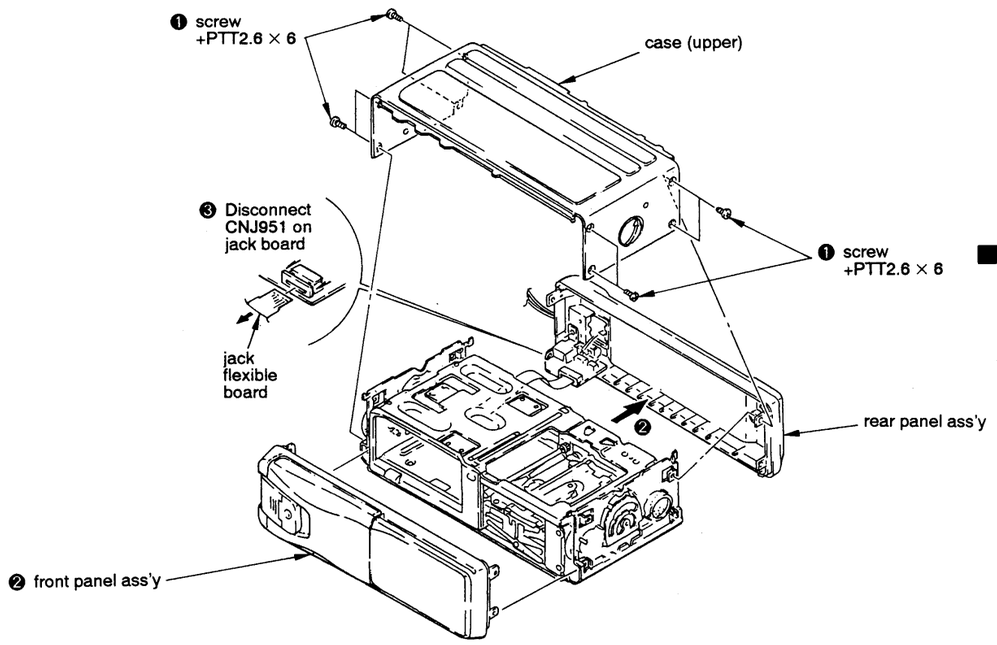
Notas sobre el cable óptico
Tenga en cuenta lo siguiente cuando conecte el cable.
- *No doble a la fuerza el cable demasiado de forma que la parte doblada (arco) sea inferior a 5 cm de radio. Si lo hiciese, es posible que no se reprodujese sonido.*
- *Cerciórese de que el cable no quede retorcido ni oprimido de ninguna forma por objetos circundantes.*
- *No deje nunca que las partes de acoplamiento de los conectores se rayen ni se ensucien.*
- *Si se ha conectado a un sistema de audio para automóvil compatible con el sistema de transmisión digital óptico BUS Sony, vuelva a instalar la tapa protectora en su posición original.*
- *Utilice un cable óptico diseñado para los sistemas de audio para automóvil Sony, y también apropiado para este cambiadiscos.*

使用光信號電纜線時的注意事項
連接光信號電纜線時請注意下列事項
- *不可強行彎折電纜線，若彎曲部份的弧度半徑不可小於 5cm，就沒有聲音傳出。*
- *電纜線不可扭轉或被壓在重物底下。*
- *不可撞傷或弄髒連接器的插頭部分。*
- *如未連接與 Sony BUS 光信號數碼傳動系統有共容性的汽車音響，即請將保護蓋重新安裝於它原來的位置。*
- *使用與 Sony 汽車音響系統設計和適合本唱片轉換器的光信號電纜線。*

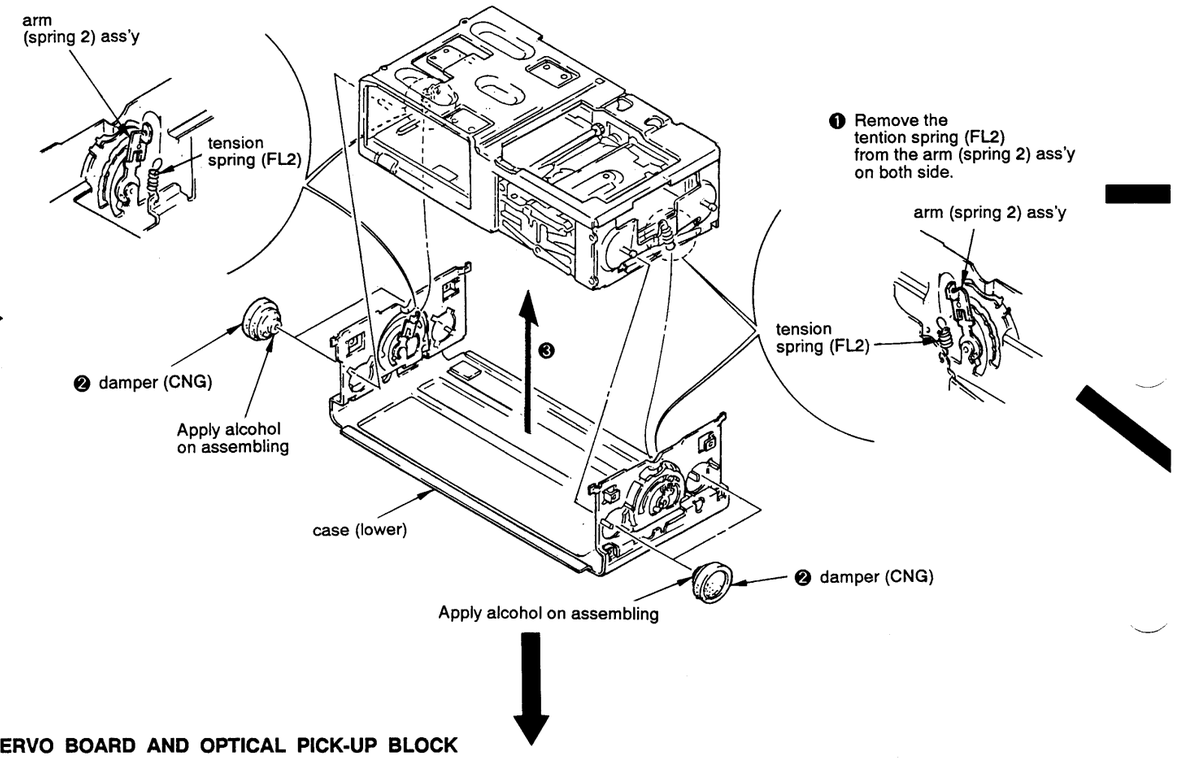
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

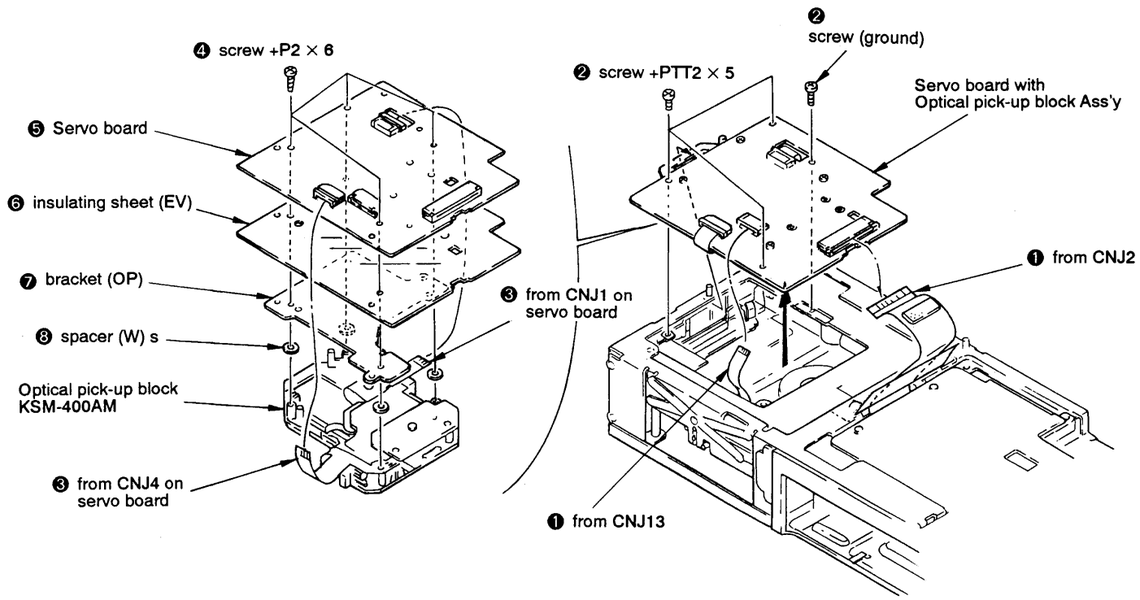
CASE (UPPER), FRONT PANEL ASS'Y REAR PANEL ASS'Y


❶ screw +PTT2.6 × 6
case (upper)
❸ Disconnect CNJ951 on jack board
jack flexible board
❶ screw +PTT2.6 × 6
rear panel ass'y
❷ front panel ass'y

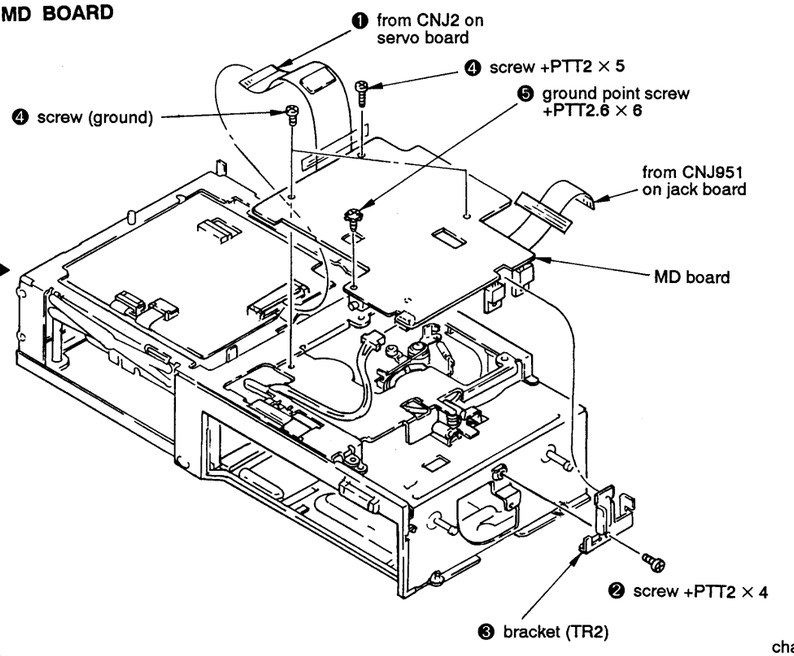
CASE (LOWER)


arm (spring 2) ass'y
tension spring (FL2)
❶ Remove the tention spring (FL2) from the arm (spring 2) ass'y on both side.
arm (spring 2) ass'y
tension spring (FL2)
❷ damper (CNG)
Apply alcohol on assembling
❸
case (lower)
❷ damper (CNG)
Apply alcohol on assembling

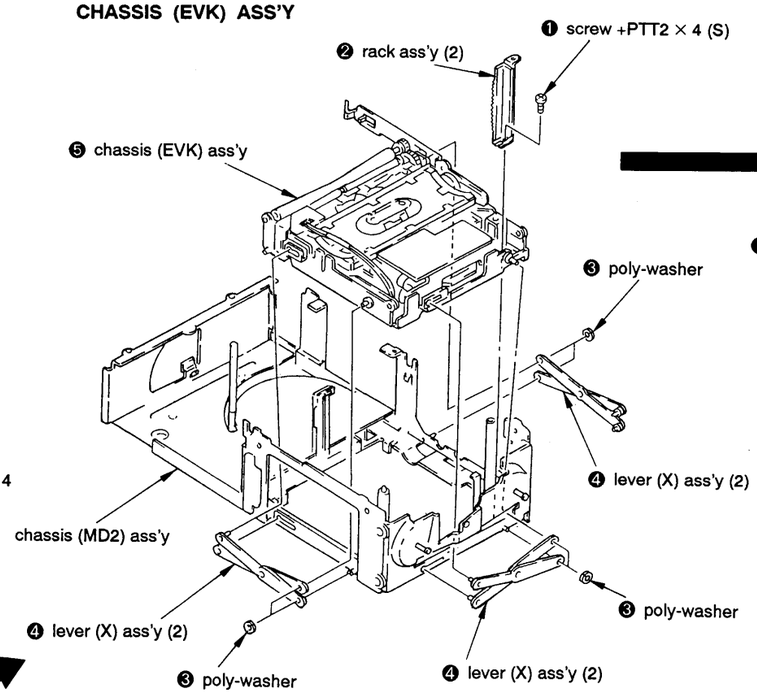
SERVO BOARD AND OPTICAL PICK-UP BLOCK


❹ screw +P2 × 6
❺ Servo board
❻ insulating sheet (EV)
❼ bracket (OP)
❽ spacer (W) s
Optical pick-up block KSM-400AM
❸ from CNJ4 on servo board
❷ screw (ground)
❷ screw +PTT2 × 5
Servo board with Optical pick-up block Ass'y
❶ from CNJ2
❸ from CNJ1 on servo board
❶ from CNJ13

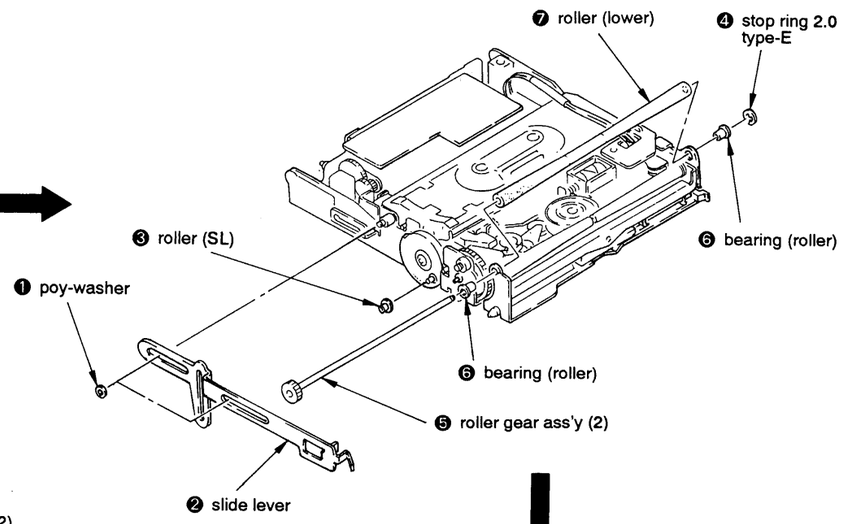
MD BOARD


❶ from CNJ2 on servo board
❹ screw +PTT2 × 5
❹ screw (ground)
❺ ground point screw +PTT2.6 × 6
from CNJ951 on jack board
MD board
❷ screw +PTT2 × 4
❸ bracket (TR2)

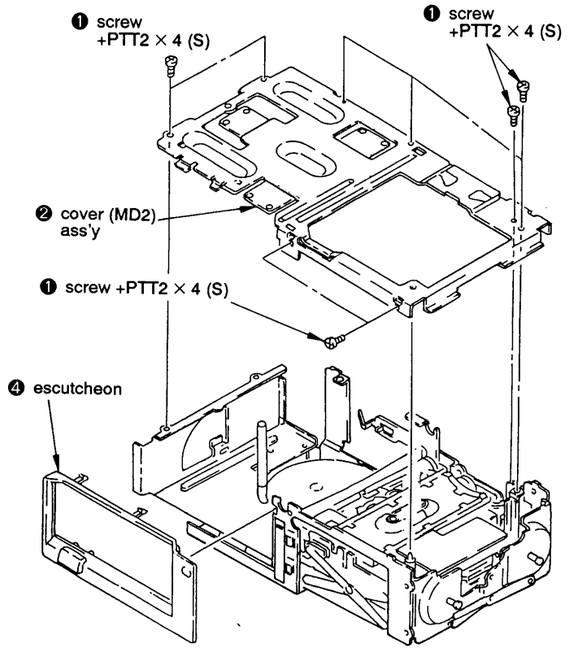
CHASSIS (EVK) ASS'Y



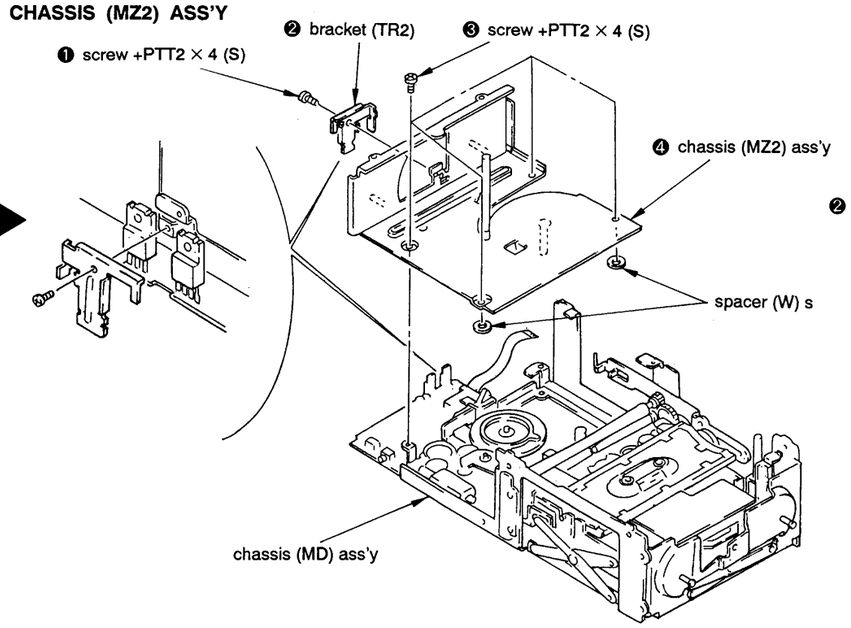
ROLLER (LOWER), SLIDER LEVER



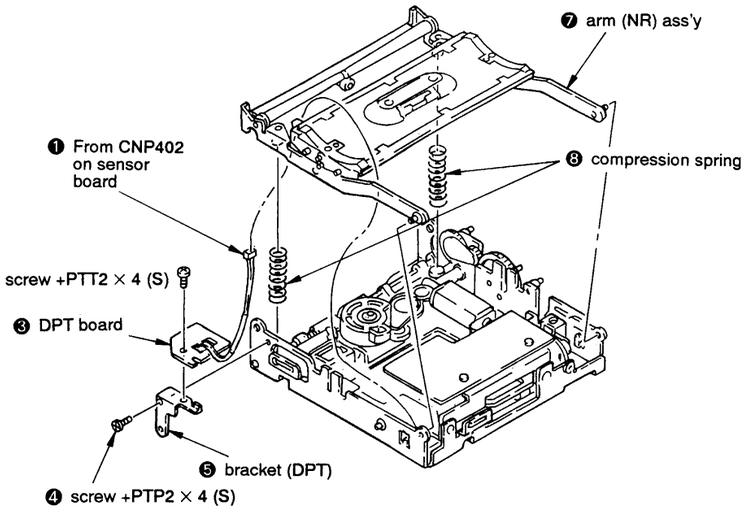
COVER (MD) ASS'Y AND ESCUTCHEON



CHASSIS (MZ2) ASS'Y



DPT BOARD AND ARM (NR) ASS'Y



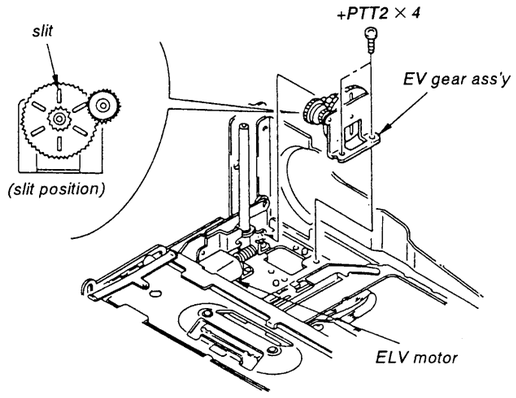
SECTION 3
MECHANICAL ADJUSTMENTS

3-1. ELEVATOR HEIGHT ADJUSTMENT

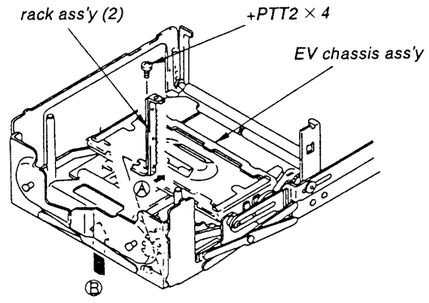
This adjustment should be done when replacing the rack assembly on the parts related to it.

Procedure :

1. Fit the EV gear assembly after adjusting its slit position as shown in the figure. (When the slit position is out of order after fitting, it can be adjusted finely by turning the worm gear of the ELV motor.)



2. Fit the rack assembly putting it in the arrow Ⓐ direction. At this time insert a spacer (approx. 1 mm thickness) or fit the rack assembly while pushing the EV chassis assembly in the arrow Ⓑ direction.



Note : When this adjustment is out of order, it doesn't operate normally and the roaring of the motor can be heard. In this case adjust again.

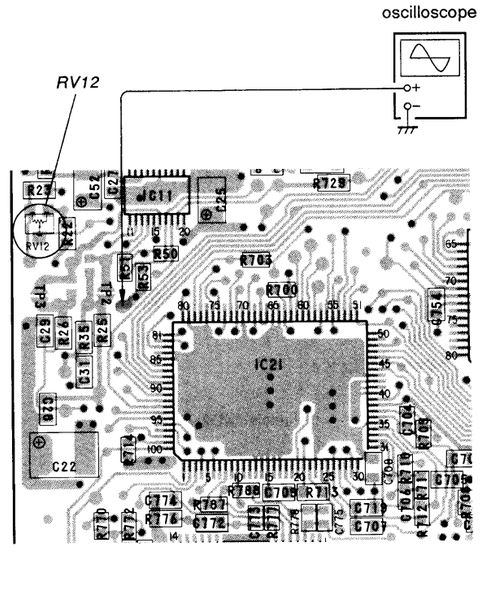
SECTION 4
ELECTRICAL ADJUSTMENTS

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code : 3-702-101-01, but only when indicated.
3. Power supply voltage : DC 14.4 V (more than 3A).

4-1. FOCUS OFFSET ADJUSTMENT

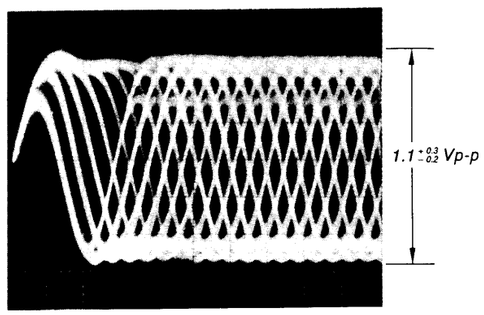
Procedure :

【SERVO BOARD】 – Conductor Side –



1. Connect the oscilloscope to SERVO board test point [RF], pin ㉖ of IC21.
2. Put the set into play mode by loading the disc.
3. Adjust (SERVO board) RV12 so that waveform on the oscilloscope (eye pattern) is good.
   (A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.)

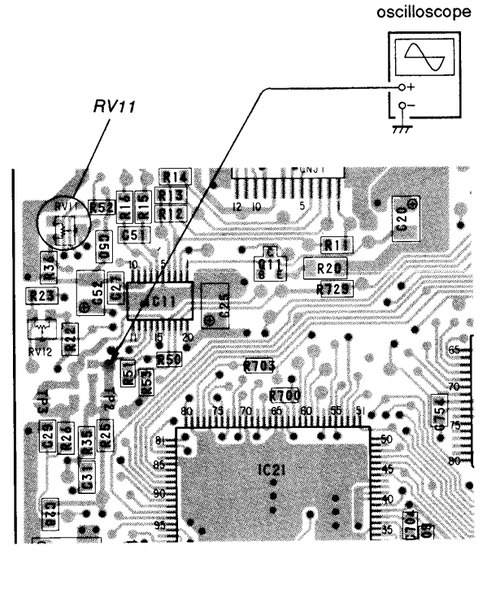
Volt/Div : 200 mV
Time/Div : 0.5 μSec



4-2. TRACKING OFFSET ADJUSTMENT

Procedure :

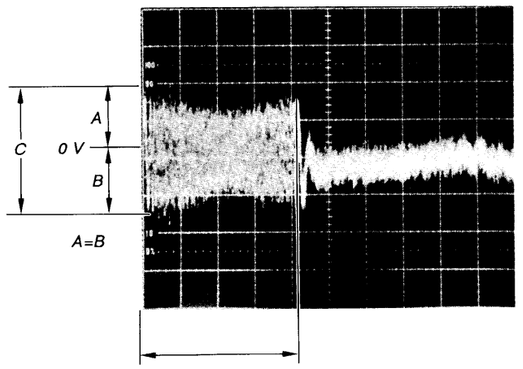
【SERVO BOARD】 – Conductor Side –



1. Connect the oscilloscope to SERVO board test point [TE], pin ⑭ of IC11.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ AMS ⏭ button, then, check the traverse waveform.*
4. Adjust RV11 (SERVO board) so that the oscilloscope reading is symmetrical in relation to 0 V.

*Traverse waveform : This is the tracking error waveform appears when crossing the track.

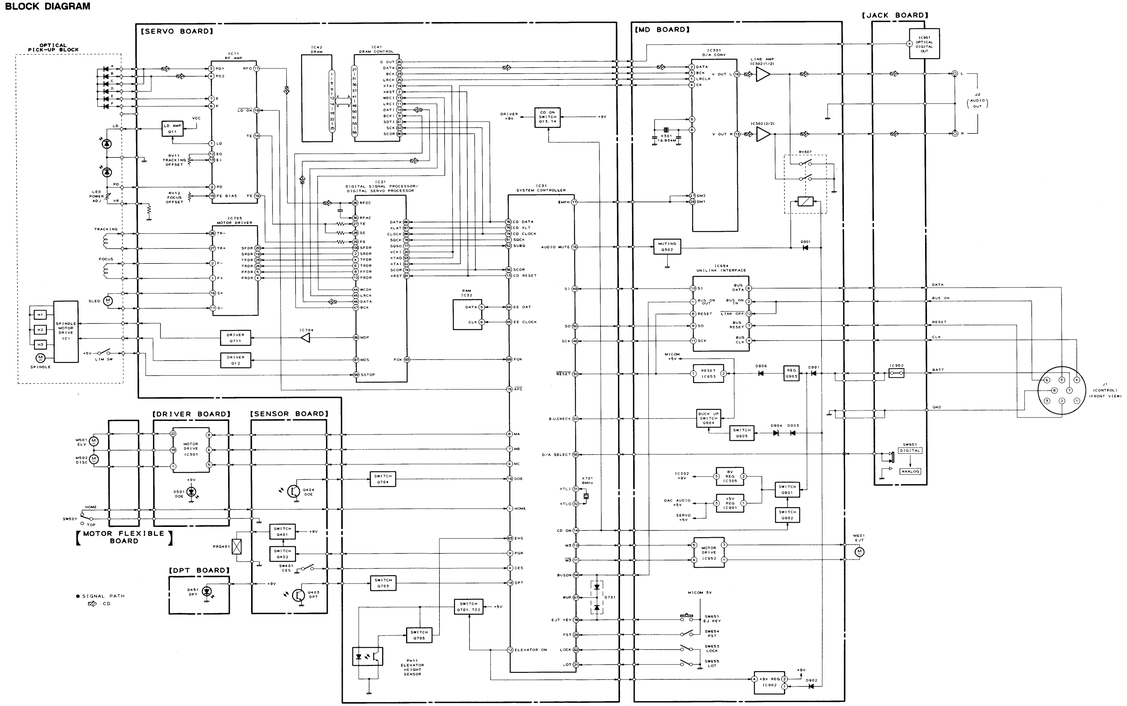
Volt/Div : 0.5 V
Time/Div : 2 mSec
Center 0 V



traverse waveform
(100 track jump waveform)

SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM



• Semiconductor Lead Layouts

BA6247FP-Y

MM1284XFFE

EC10DS2

AT24C16N-10SI-TR
BA6297F
LM2904M
NJM5532M-D

PCM1710U-A

RB411D
RD6.2M-B1
RD6.2M-B2

BA6297AFP

PQ09RA1

1SS184

CXA1571N

M5F7805L

1SS319 (TE85R)

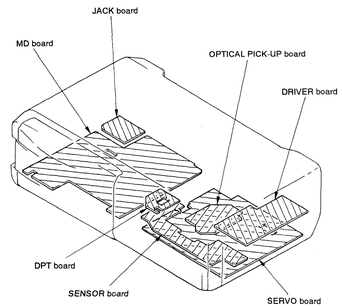
CXD2515Q

2SB1446

AN1102W-1-TR

CXD2512AQ
CXP84332-008Q

• Circuit Boards Location



Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ Line.
- : panel designation.
- : adjustment for repair.
- Power voltage is fed from the CD changer controller.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

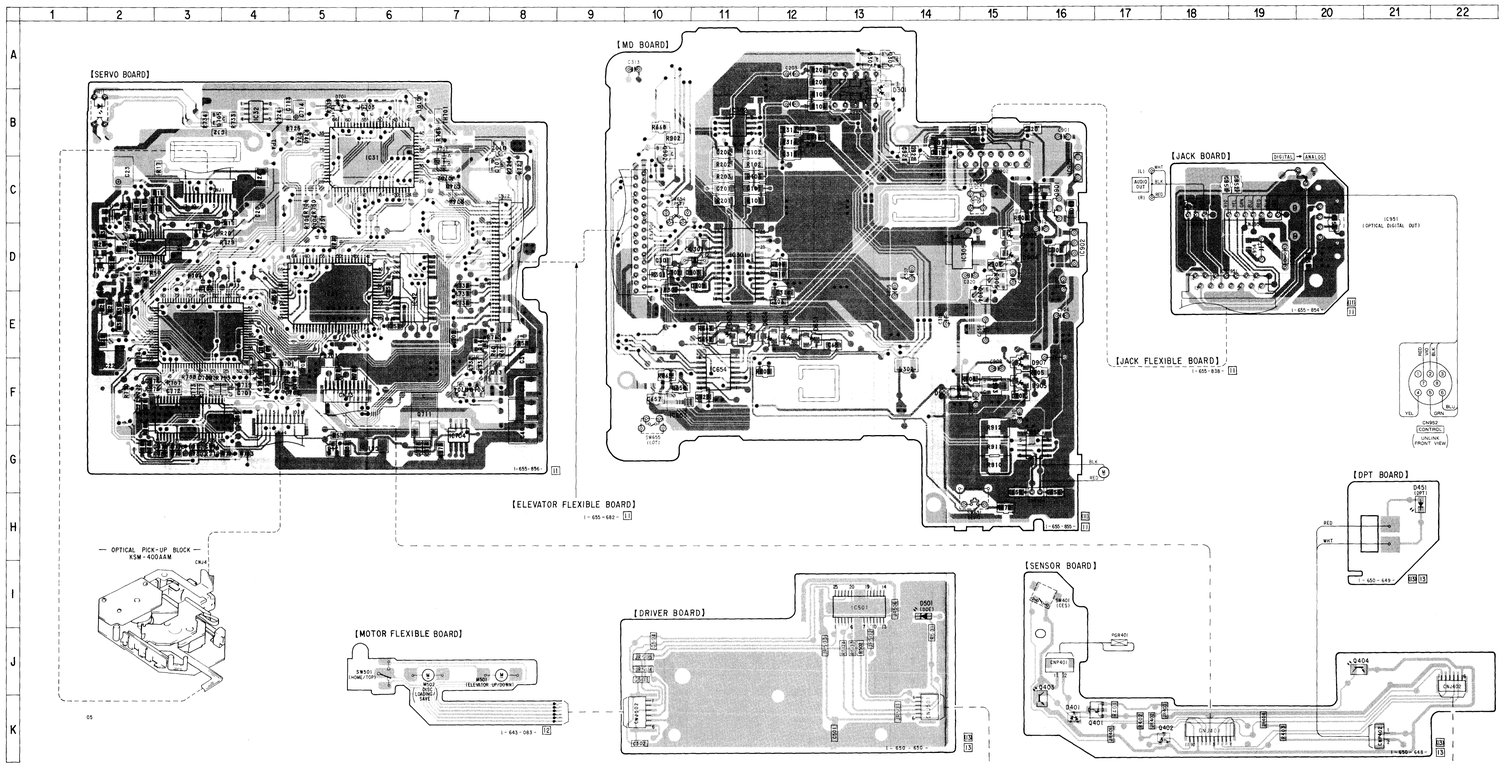
5-2. PRINTED WIRING BOARDS

• Semiconductor Location

Ref. No.	Location
D301	B-13
D401	K-16
D451	H-21
D501	I-14
D651	E-12
D652	E-12
D653	E-11
D654	E-12
D655	E-11
D701	B-5
D901	C-16
D902	C-16
D903	D-15
D904	D-15
D905	F-15
D906	F-14
D907	F-15
IC11	D-2
IC21	E-3
IC31	C-6
IC32	B-4
IC41	E-5
IC42	E-6
IC301	D-11
IC302	B-11
IC305	D-15
IC501	I-13
IC652	G-16
IC653	F-10
IC654	F-11
IC703	F-3
IC704	D-7
IC901	C-16
IC902	D-16
IC951	C-20
IC952	D-19
Q11	D-3
Q12	G-5
Q13	F-6
Q14	F-7
Q302	A-13
Q303	A-13
Q401	K-16
Q402	K-17
Q403	K-16
Q404	J-20
Q701	C-8
Q702	F-8
Q703	F-7
Q704	F-7
Q705	B-3
Q711	F-6
Q901	C-16
Q902	B-10
Q903	F-15
Q904	E-15
Q905	D-15

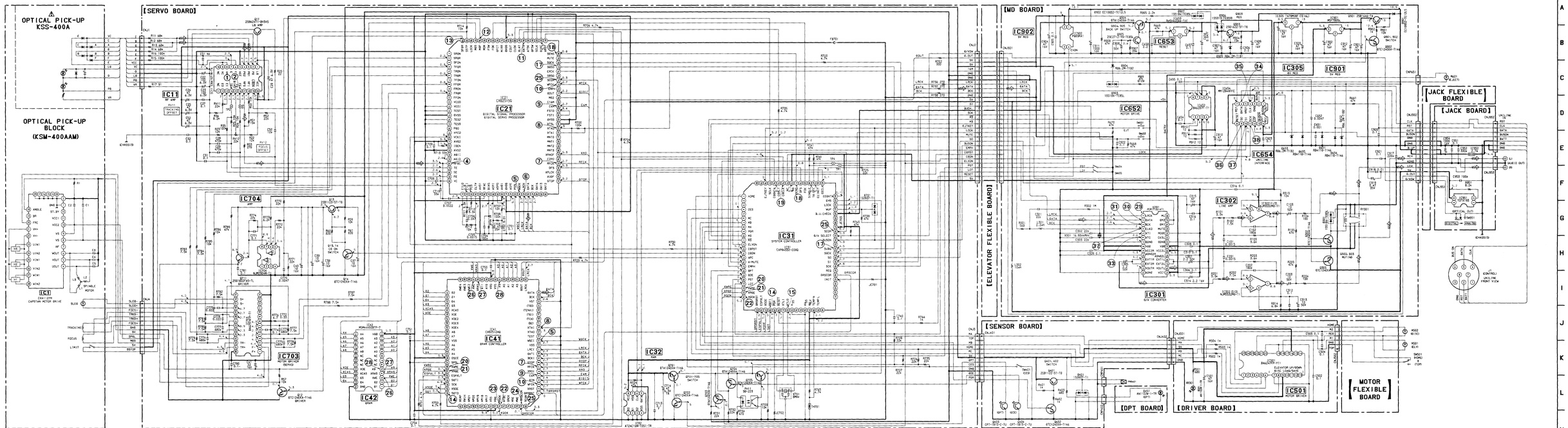
Note on Printed Wiring Board:

- ○——: parts extracted from the component side.
- ●: Through hole.
- Pattern of the rear side.
- : Pattern from the side which enables seeing.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F G H I J K
[SERVO BOARD]
[MD BOARD]
[JACK BOARD]
[JACK FLEXIBLE BOARD]
[ELEVATOR FLEXIBLE BOARD]
[DPT BOARD]
[SENSOR BOARD]
[DRIVER BOARD]
[MOTOR FLEXIBLE BOARD]
OPTICAL PICK-UP BLOCK
KSM-400AAM

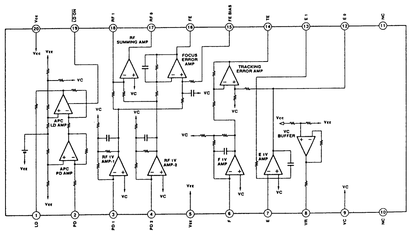
5-3. SCHEMATIC DIAGRAM

• See pages 13 to 15 for Waveforms, page 17 for notes, and pages 26 to 28 for IC Block Diagrams.

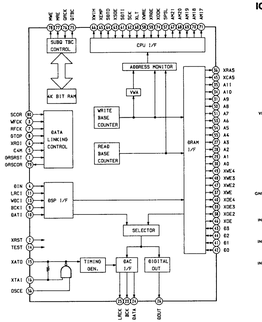


• IC Block Diagrams

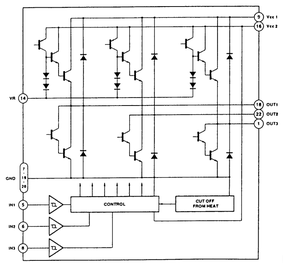
IC11 CXA1571N (SERVO BOARD)



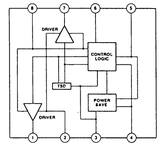
IC41 CXD2512AQ



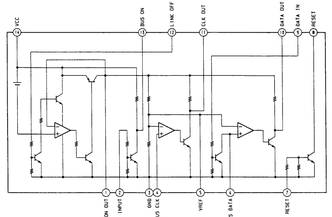
IC501 BA6247FP-Y (DRIVER BOARD)



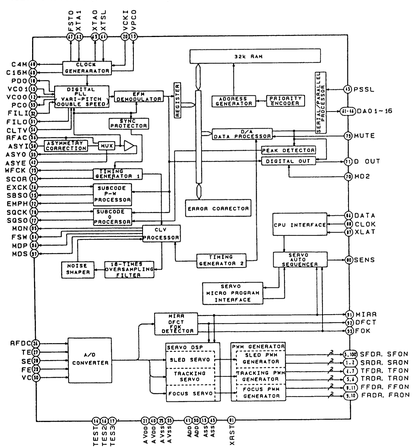
IC652 BA6287F (MD BOARD)



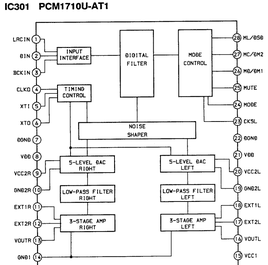
IC654 MM1284XFFE (MD BOARD)



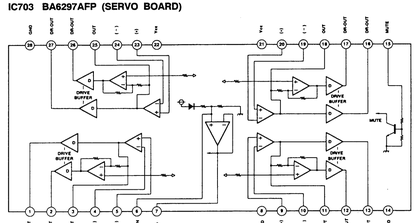
IC21 CXD2515Q (SERVO BOARD)



IC301 PCM1710U-AT1



IC703 BA6297AFP (SERVO BOARD)



5-4. IC PIN FUNCTION DESCRIPTION

IC21 CXD2515Q (SERVO BOARD)

Pin No.	Pin Name	I/O	Function
1	SRON	—	Not used.
2	SRDR	O	Sled drive signal output.
3	SFON	—	Not used.
4	TFDR	O	Tracking drive signal output.
5	TRON	—	Not used.
6	TRDR	O	Tracking drive signal output.
7	TFON	—	Not used.
8	FFDR	O	Focus drive signal output.
9	FRON	—	Not used.
10	FRDR	O	Focus drive signal output.
11	FFON	O	Not used.
12	VCOO	—	Not used.
13	VCOI	I	Connected to the oscillating circuit for analog EFM PLL.
14	TEST	I	TEST terminal, Normally connected to ground.
15	Vss	—	Digital ground.
16	TES2	I	TEST terminal. Normally connected to ground.
17	TES3	I	TEST terminal. Normally connected to ground.
18	PDO	—	Not used.
19	VPCO	—	Not used.
20	VCKI	I	Clock input from external VCO for variable pitch. fcenter=16.9344 MHz.
21	AVDD	—	Analog power supply.
22	IGEN	I	Connected to current source reference resistor for OP amplifier.
23	AVss	—	Analog ground.
24	ADII	I	A/D converter input.
25	ADIO	O	OP amplifier output.
26	RFDC	I	RF signal input. Input range 2.15 − 5.0 V (On VDD=AVDD=5.0 V).
27	TE	I	Tracking error signal input. Input range 2.5 ± 1.0 V (On VDD=AVDD=5.0 V).
28	SE	I	Sled error signal input. Input range 2.5 ± 1.0 V (On VDD=AVDD=5.0 V).
29	FE	I	Focus error signal input. Input range 2.5 ± 1.0 V(On VDD=AVDD=5.0 V).
30	VC	I	Center point of voltage input.
31	FILO	O	Filter output for master PLL.
32	FILI	I	Filter input for master PLL.
33	PCO	O	Charge pump output for master PLL.
34	CLTV	I	VCO for master control voltage input.
35	AVss	—	Analog ground.
36	RFAC	I	EFM signal input.
37	BIAS	I	Asymmetry circuit constant-current input.
38	ASYI	I	Asymmetry comparating voltage input.
39	ASYO	O	EFM full swing output (L=VSS, H=VDD).
40	AVDD	—	Analog power supply.

Pin No.	Pin Name	I/O	Function
41	VDD	—	Digital power supply.
42	ASYE	I	Asymmetry circuit ON/OFF (L=OFF, H=ON).
43	PSSL	I	Audio data output mode select input. L: Serial output H: Parallel output.
44	WDCK	O	48 bit slot D/A interface. Word clock f=2Fs.
45	LRCK	O	48 bit slot D/A interface. LR clock f=FS.
46	DA16	O	DA16 output when PSSL=1. 48 bit slot serial data when PSSL=0.
47	DA15	O	DA15 output when PSSL=1. 48 bit slot bit clock when PSSL=0.
48	DA14	—	Not used.
49	DA13	—	Not used.
50	DA12	—	Not used.
51	GTOP	O	DA11 output when PSSL=1. GTOP output when PSSL=0.
52	XUGF	—	Not used.
53	XPLCK	—	Not used.
54	GFS	O	DA08 output when PSSL=1. GFS output when PSSL=0.
55	RFCK	O	DA07 output when PSSL=1. RFCK output when PSS=0.
56	C2PO	—	Not used.
57	XRAOF	O	DA05 output when PSSL=1. XRAOF output when PSSL=0.
58	MNT3	—	Not used.
59	MNT2	—	Not used.
60	MNT1	—	Not used.
61	MNT0	—	Not used.
62	XTAI	I	Input from X'tal oscillating circuit. 16.9344 MHz or 33.8688 MHz input.
63	XTAO	O	X'tal oscillating circuit output.
64	XTSL	I	X'tal select input. L: 16.9344 MHz. H: 33.8688MHz.
65	Vss	—	Digital ground.
66	FSTI	I	2/3 divided signal of pins ⑯ and ⑰ input.
67	FSTO	O	2/3 divided signal of pins ⑯ and ⑰ output.
68	C4M	O	4.2336 MHz output. Changed at the same time on variable pitch.
69	C16M	—	Not used.
70	MD2	I	Digital out ON/OFF control. L=OFF, H=ON.
71	DOUT	O	Digital-out output.
72	EMPH	—	Not used.
73	WFCK	O	WFCK output.
74	SCOR	O	Sub-code sync. output. (H when sub-code sync. So or SI is detected.)
75	SBSO	—	Not used.
76	EXCK	—	Not used.
77	SQSO	O	Sub Q 80 bit output. PCM peak data, level data 16 bit output.
78	SQCK	I	Clock for SQSO read out input.
79	MUTE	I	Mute switch. H: Mute.
80	SENS	O	SENS output to CPU.

Pin No.	Pin Name	I/O	Function
81	XRST	I	System reset. L: Reset.
82	DIRC	—	Not used.
83	SCLK	I	Clock for reading SENS serial data.
84	DFSW	I	DFCT switch. H: Circuit for DFCT OFF.
85	ATSK	I	For anti-shock.
86	DATA	I	Serial data from CPU input.
87	XLAT	I	Latch from CPU input.
88	CLOK	I	Clock for serial data transferring from CPU input.
89	COUT	—	Not used.
90	VDD	—	Digital power supply.
91	MIRR	—	Not used.
92	DFCT	—	Not used.
93	FOK	O	Focus OK input.
94	FSW	—	Not used.
95	MON	—	Not used.
96	MDP	O	Spindle motor servo control.
97	MDS	O	Spindle motor servo control.
98	LOCK	—	Not used.
99	SSTP	I	Most inner circuit on disc detection signal.
100	SFDR	O	Sled drive output.

(DRIVER BOARD) IC501 (BA6247FP-Y) MOTOR DRIVER IC OPERATION

The elevator motor connected between Pin ② and Pin ⑩ of IC501 is as M501, and the disc loading/saving motor connected between Pin ③ and Pin ⑩ of IC501 is as M502.

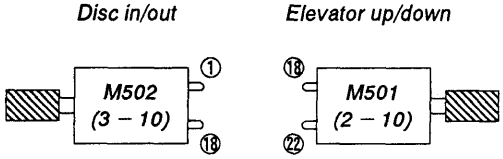
When the IC port logic is Pin ② > Pin ⑩, Pin ③ > Pin ⑩, the rotating direction of M501 and M502 becomes normal.

ROTATION TRUTH TABLE

① When MB = MC, both M501 and M502 are stop. (MA value is free.)

② When MB ≠ MC:

MA Pin ⑧	MB Pin ⑥	MC Pin ⑤	M501	M502	Motor Terminal			Operation
					㉒	①	⑱	
L	L	H	Reverse	Stop	L	OPEN	H	Elevator UP
H	L	H	Normal	Stop	H	OPEN	L	Elevator DOWN
L	H	L	Stop	Reverse	OPEN	L	H	Disc load
H	H	L	Stop	Normal	OPEN	H	L	Disc save



IC31 CXP84332-008Q (SERVO BOARD)

Pin No.	Pin Name	I/O	Function
1	HOME	I	HOME sensor input.
2	NC	—	Not used.
3	NC	—	Not used.
4	CES	I	CES sensor input.
5	NC	—	Not used.
6	MC	O	Motor control (M501, M502).
7	MB	O	Motor control (M501, M502).
8	MA	O	Motor control (M501, M502).
9	PGR	O	Plunger control.
10	M3	O	EJECT motor control.
11	$\overline{M3}$	O	EJECT motor control.
12	ELVON	O	Elevator up/down, sensor power control.
13	CDRST	O	Servo system reset. "L": Reset.
14	CDON	O	Servo system power on/off. "H": On.
15	$\overline{APC}$	O	Laser on/off control. "L": Laser on.
16	A-MUTE	O	Audio output mute.
17	EMPH	O	Emphasis control.
18	DPT	I	DPT sensor input.
19	DOE	I	DOE sensor input. Disc is above pick-up: "L".
20	PST	I	PST sensor input.
21	LOT	I	LOT sensor input.
22	XWRE	O	DRAM write enable signal.
23	XRDE	O	DRAM read enable signal.
24	XQOK	O	Sub code Q OK output.
25	GRSRST	O	"H" output on track jump .
26	ESPXLT	O	Serial data latch signal.
27	XSOE	O	Serial data control.
28	SDTI	O	CXD2515Q control signal output.
29	P. PLAY	I	Program play select. "L": Program play can be used.
30	$\overline{RESET}$	I	System reset. "L": Reset.
31	XTLI	I	System clock input.
32	XTLO	O	System clock output.
33	V_{SS}	—	Ground.
34	NC	—	Not used.
35	NC	—	Not used.
36	AV_{SS}	—	A/D converter ground.
37	AV_{REF}	I	A/D converter reference voltage input.
38	TEMP_H	I	High temperature detection (For servo gain correction).
39	TEMP_L	—	Not used.
40	NC	—	Not used.

Pin No.	Pin Name	I/O	Function
41	NC	—	Not used.
42	NC	—	Not used.
43	NC	—	Not used.
44	NC	—	Not used.
45	INIT	I	Analog digital output. Set E^2 PROM is used on not.
46	GRSCOR	I	SCOR of X'tal precision adsorbs from jitter margin.
47	REQ	—	Not used.
48	SCK	I	Serial clock input.
49	SI	I	Serial data input.
50	SO	O	Serial data output.
51	SQCK	O	Clock for SUBQ read output.
52	SUBQ	I	SUBQ data input.
53	NC	—	Not used.
54	BUSON	I	"L" during controller communicating.
55	DIA_SELECT	I	Digital/Analog selection. "H": Analog.
56	SCOR	I	SCOR input.
57	NC	—	Not used.
58	NC	—	Not used.
59	NC	—	Not used.
60	B. U. CHECK	I	BACK UP detection input. "H": BACK UP on.
61	WUP	I	External timer/counter input.
62	LOCK	I	During locking magazine: "H".
63	EHS	I	Elevator location detection.
64	EEDATA	I/O	External 16 bits timer/counter input/output.
65	EECLK	O	14 bits PWM output.
66	EEINIT	I	EEPROM initializing input. "H": Format.
67	TR OFF	—	"L" : Tracking off (During SIGNAL is "L" only.
68	SINGLE	I	"L" : One disc playing test mode.
69	FOK	I	FOK input.
70	GFS	I	GFS input.
71	SENS	I	SENS input.
72	V_{DD}	—	Power supply.
73	NC	—	Not used.
74	CDCLK	O	Servo system control output.
75	CDXLT	O	Servo system control output.
76	CDDATA	O	Servo system control output.
77	SCLK	O	Clock for serial communication output.
78	EJTKEY	I	EJECT key input. "H": On.
79	NC	—	Not used.
80	NC	—	Not used.

IC41 CXD2512AQ (SERVO BOARD)

Pin No.	Pin Name	I/O	Function
1	GRSRST	I	"H" when track jump (Input from CPU).
2	XRST	I	System reset. Normally "H".
3	WFCK	I	WFCK (Write frame clock) input.
4	DIN	I	Digital-out input.
5	C4M	I	4.2336 MHz input (Clock for GRSCOR generating).
6	XROI	I	RAM over flow input (from DSP).
7	RFCK	I	RFCK (Read frame clock) input (from DSP).
8	GTOP	I	Gate of frame sync. protection opening signal input (from DSP).
9	BCKI	I	Bit clock input (48 bit slot /Applicable to MSB first).
10	DATI	I	PCM data input.
11	LRCI	I	LRCK input.
12	Vss		Ground.
13	WDCI	I	WDCK input.
14	TEST	I	For test. Normally "L".
15	XTAO	—	Not used.
16	XTAI	I	16.9344 MHz from X'tal osillating circuit input.
17	(BC)	—	For test. Nomally opened.
18	(TCK)	—	For test. Nomally opened.
19	(TDI)	—	For test. Nomally opened.
20	(TENAI)	—	For test. Nomally opened.
21	(TDO)	—	For test. Nomally opened.
22	(VST)	—	For test. Nomally "L".
23	BCK	O	Bit clock output (48 bit slot).
24	DATA	O	PCM data output (MSB first).
25	LRCK	O	LR clock output.
26	DOUT	O	Digital-out output.
27	A3	O	Address bus 3 for 4 M/16 M DRAM.
28	A2	O	Address bus 2 for 4 M/16 M DRAM.
29	A1	O	Address bus 1 for 4 M/16 M DRAM.
30	A0	O	Address bus 0 for 4 M/16 M DRAM.
31	A9	O	Address bus 9 for 4 M/16 M DRAM.
32	Vss	—	Ground.
33	VDD	—	Power supply (+5 V).
34	A10	—	Not used.
35	A11	—	Not used.
36	XRAS	O	DRAM row address strobe signal.
37	XWE	O	DRAM data input enable signal on 4 M × n/16 M 1 mode.
38	XWE2	—	Not used.
39	XWE3	—	Not used.
40	XWE4	—	Not used.

Pin No.	Pin Name	I/O	Function
41	D2	I/O	DRAM data bus 2.
42	D1	I/O	DRAM data bus 1.
43	D4	I/O	DRAM data bus 4.
44	D3	I/O	DRAM data bus 3.
45	XCAS	O	DRAM column address strobe signal.
46	XOE	O	DRAM data output enable signal on 4 M × n/16 M × 1 mode.
47	XOE2	—	Not used.
48	XOE3	—	Not used.
49	XOE4	—	Not used.
50	A8	O	Address bus 8 for 4 M/16 M DRAM.
51	A7	O	Address bus 7 for 4 M/16 M DRAM.
52	Vss	—	Ground.
53	A6	O	Address bus 6 for 4 M/16 M DRAM.
54	A5	O	Address bus 5 for 4 M/16 M DRAM.
55	A4	O	Address bus 4 for 4 M/16 M DRAM.
56	OSCE	I	X'tal oscillating enable signal. "H" or OPEN: Enable.
57	SPSL	I	CPU input data serial/paralled select signal "L": Parallel.
58	XWRE	I	DRAM write enable signal.
59	XRDE	I	DRAM read enable signal.
60	XLT	I	CPU serial data input latch signal. Latch at ⌐‾└. (Common use with DSP or the like is impossible).
61	SDTI	I	CPU serial data input (Common use with DSP or the like is possible).
62	SCK	I	Clock for CPU serial I/F (Common use with DSP or the like is possible).
63	XSOE	I	CPU serial data output enable signal.
64	SDTO	O	CPU serial data output.
65	XEMP	—	Not used.
66	XWIH	—	Not used.
67	AM21	—	Not used.
68	AM20	—	Not used.
69	AM19	—	Not used.
70	AM18	—	Not used.
71	AM17	—	Not used.
72	Vss	—	Ground.
73	VDD	—	Power supply (+5 V).
74	XQOK	I	Sub-code Q OK input.
75	QTBC	—	Not used.
76	QRCK	—	Not used.
77	MRE	—	Not used.
78	MWE	—	Not used.
79	GRSCOR	O	SCOR for X'tal orecision absobs frame jitter margin.
80	SCOR	I	Sub-code sync. input.

SECTION 6
EXPLODED VIEWS

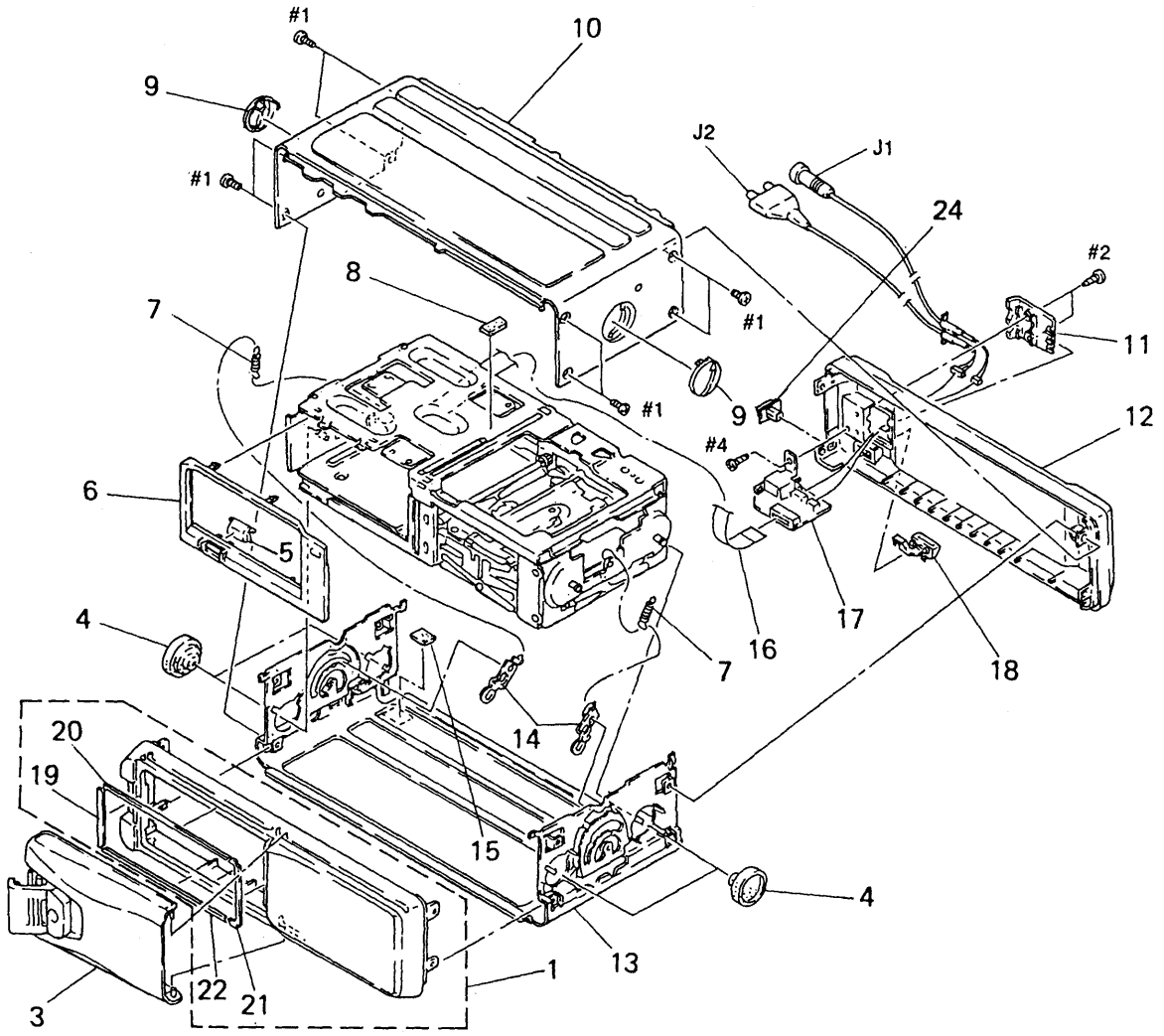
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

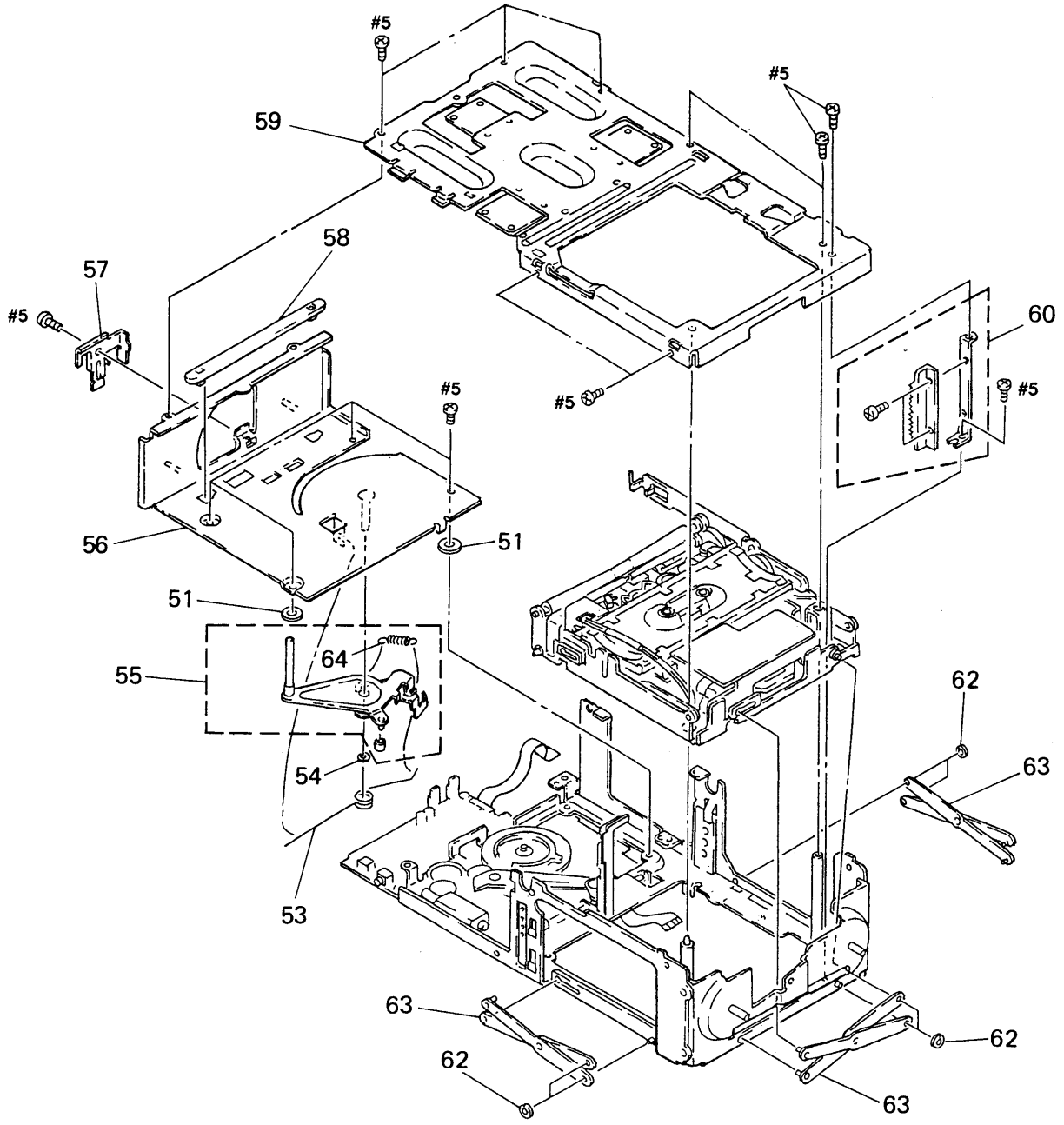
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

(1) CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-3369-798-1	PANEL SUB ASSY, FRONT (US)	
1	X-3370-093-1	PANEL SUB ASSY, FRONT (AEP, UK, Canadian, E)	
3	X-3369-799-1	DOOR ASSY (US)	
3	X-3370-094-1	DOOR ASSY (AEP, UK, Canadian, E)	
4	3-375-501-01	DAMPER (CNG)	
5	3-388-592-01	BUTTON (EJ2)	
* 6	3-388-593-01	ESCUTCHEON (2)	
7	3-923-342-01	SPRING (FL2), TENSION	
8	3-348-750-01	CUSHION (DAMPER)	
9	3-375-504-21	LEVER (SPRING)	
* 10	3-920-132-01	CASE (UPPER)	
* 11	3-920-131-01	COVER (CABLE)	
* 12	3-920-130-01	PANEL, REAR	
* 13	3-920-133-01	CASE (LOWER)	
14	X-3370-157-1	ARM (SPRING, 2) ASSY	
15	3-350-124-01	CUSHION (EJECT)	
16	1-655-683-11	JACK FLEXIBLE BOARD	
* 17	1-655-854-11	JACK BOARD	
* 18	3-921-234-01	LEVER (SW)	
19	3-921-235-01	SHEET (PACKING A)	
20	3-923-340-01	SHEET (PACKING C)	
21	3-923-341-01	SHEET (PACKING D)	
22	3-923-339-01	SHEET (PACKING B)	
24	3-924-924-01	COVER (LIGHT)	
J1, J2	1-751-253-11	CORD (WITH CONNECTOR)	

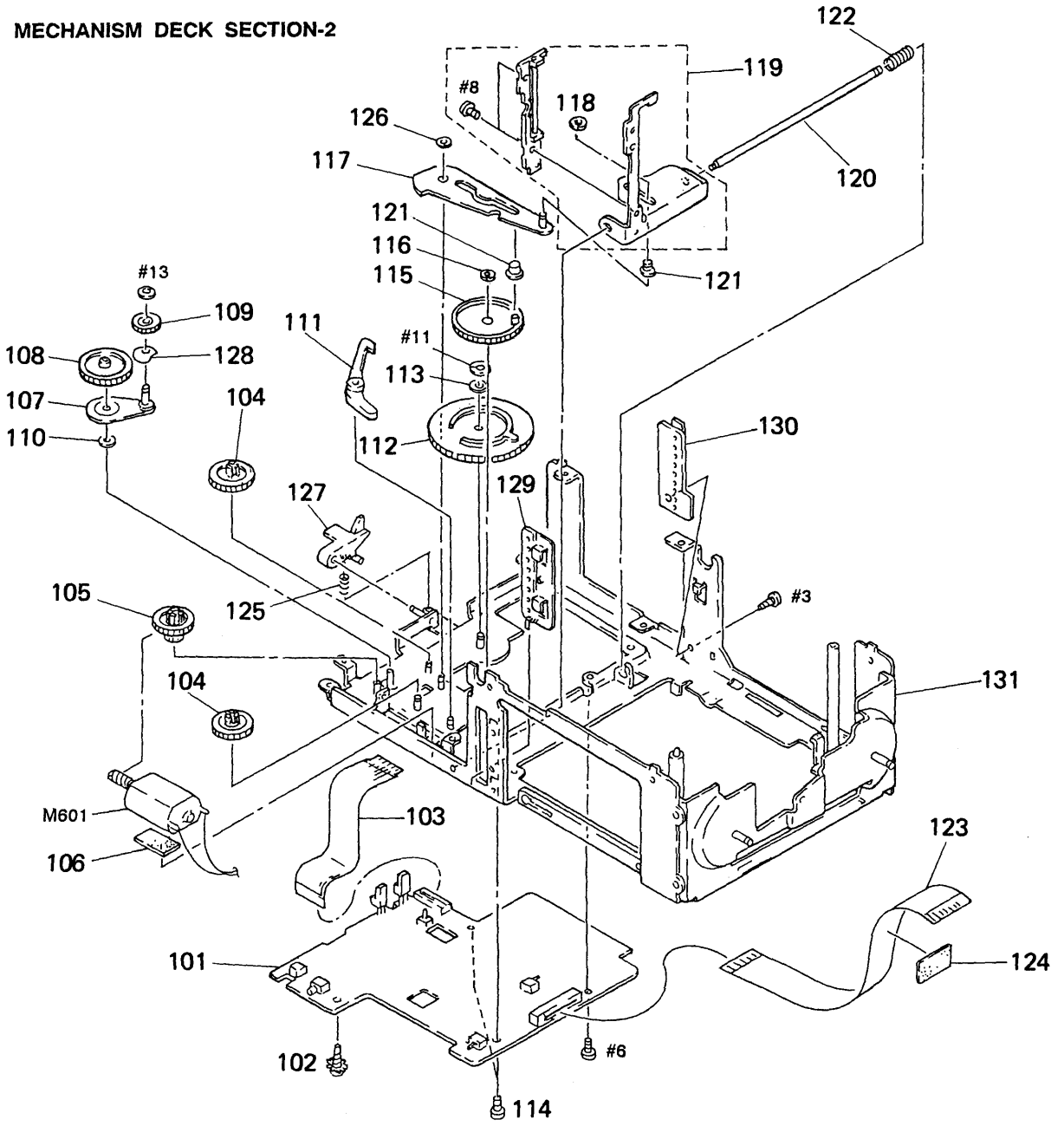
(2) MECHANISM DECK SECTION-1



Ref. No.	Part No.	Description	Remark
* 51	3-360-121-11	SPACER (W)	
53	3-364-478-01	SPRING (EJ)	
54	3-911-104-01	WASHER	
55	X-3367-988-1	LEVER (NEJ) ASSY	
* 56	X-3367-987-1	CHASSIS (MZ2) ASSY	
* 57	3-922-950-01	BRACKET (TR2)	

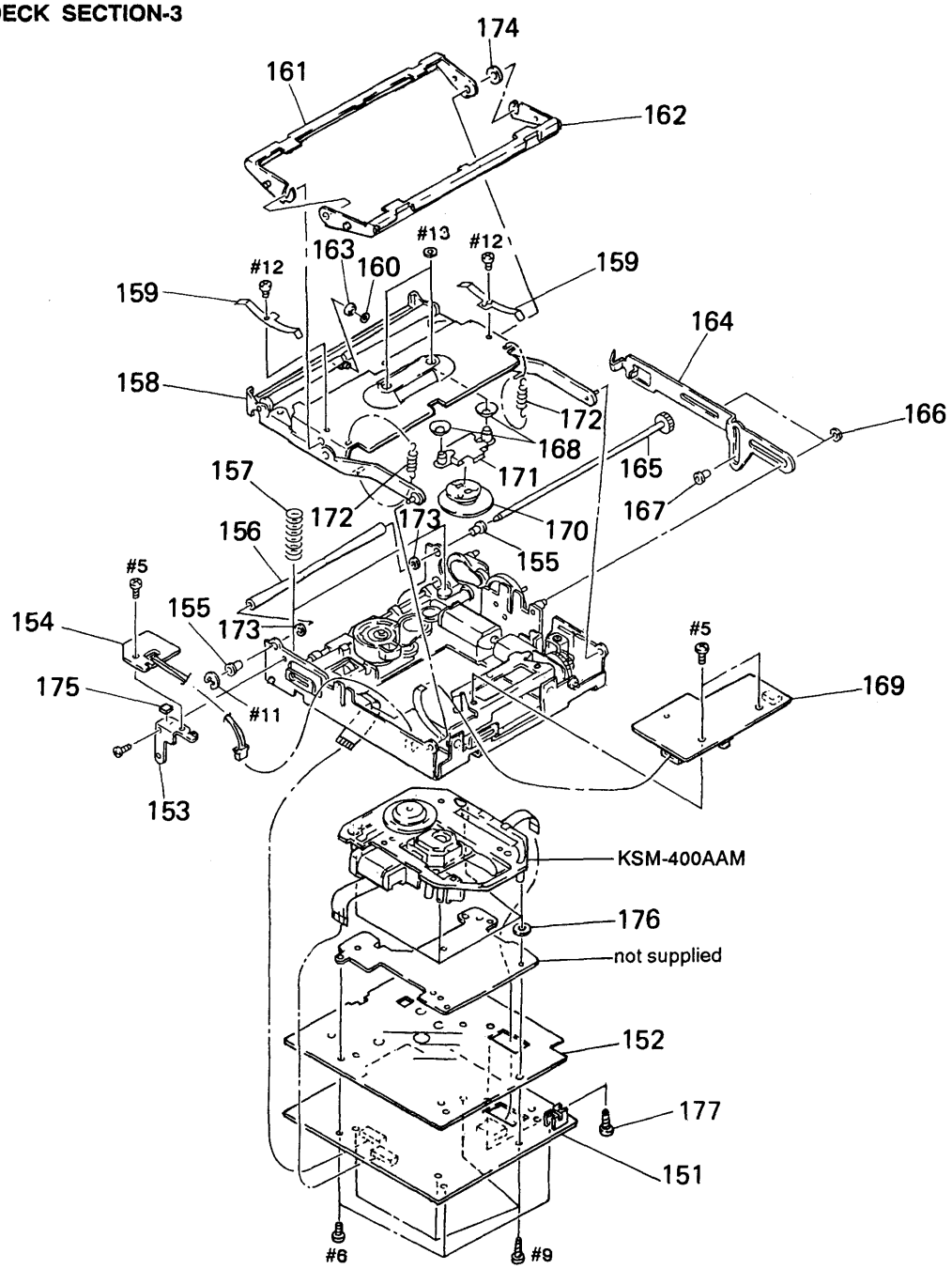
Ref. No.	Part No.	Description	Remark
* 58	3-911-106-01	GUIDE (MZ2)	
* 59	X-3367-978-1	COVER (MD2) ASSY	
60	X-3369-133-1	RACK ASSY (2)	
62	3-377-719-01	WASHER, POLYETHYLENE	
63	X-3369-132-1	LEVER (X) ASSY (2)	
64	3-568-814-00	SPRING, TENSION	

(3) MECHANISM DECK SECTION-2



Ref. No.	Part No.	Description	Remark
* 101	A-3298-571-A	MD BOARD, COMPLETE	
102	3-376-464-11	SCREW(+PTT 2.6X6), GROUND POINT	
103	1-655-683-11	JACK FLEXIBLE BOARD	
104	3-911-076-02	GEAR (MS)	
105	3-911-090-01	WHEEL (B2), WORM	
106	3-911-105-11	CUSHION (M)	
107	X-3364-526-2	LEVER (KMZ) ASSY	
108	3-911-074-02	GEAR (L2)	
109	3-912-977-01	GEAR (KS2)	
110	3-316-308-00	WASHER	
111	3-911-083-01	ARM (DR)	
112	3-912-309-01	GEAR (EJ4), CAM	
113	3-373-013-01	SPRING (EJ CAM)	
114	3-913-406-01	SCREW (GROUND)	
115	3-911-096-01	GEAR (DR2)	
116	3-377-719-01	WASHER, POLYETHYLENE	
117	X-3367-981-1	LEVER (DR2) ASSY	
118	3-379-490-11	WASHER, POLYETHYLENE	
119	X-3367-980-1	SLIDER (DR2) ASSY	
* 120	3-911-093-01	SHAFT (SDR2)	
121	3-364-506-01	ROLLER (SL)	
122	3-568-315-01	SPRING, COMPRESSION	
123	1-655-682-11	ELEVATOR FLEXIBLE BOARD	
124	9-911-844-XX	CUSHION, BATTERY	
125	3-370-385-01	SPRING, COMPRESSION	
126	3-377-720-01	WASHER, POLYETHYLENE	
* 127	3-908-794-01	LEVER (T2) (MZ LOCK)	
128	3-364-387-11	SPRING (F)	
129	3-375-706-03	CATCHER (F)	
130	3-375-707-02	CATCHER (B)	
* 131	X-3367-979-1	CHASSIS (MD2) ASSY	
M601	X-3367-983-1	MOTOR ASSY (EJECT)	

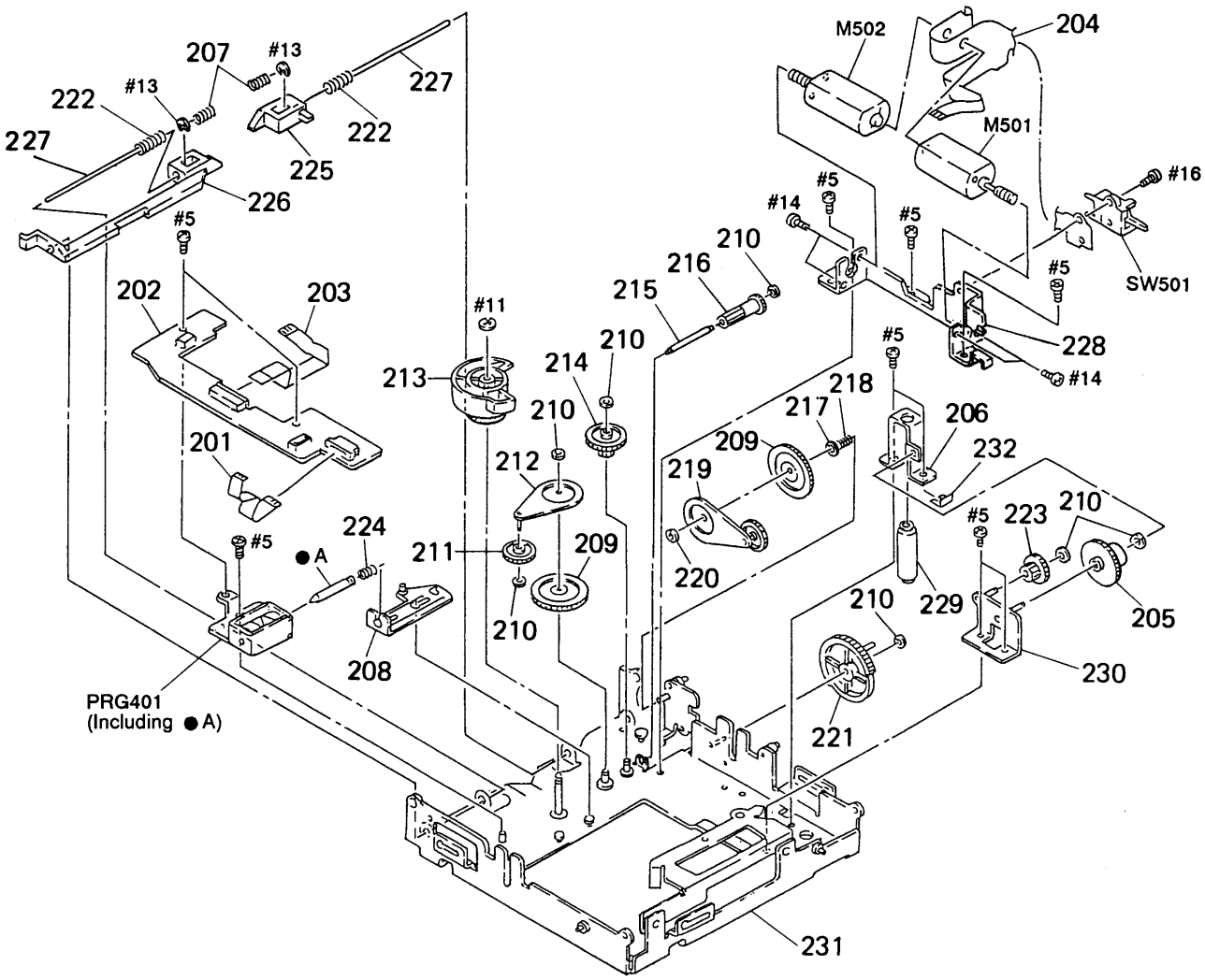
(4) MECHANISM DECK SECTION-3



Ref. No.	Part No.	Description	Remark
* 151	A-3298-572-A	SERVO BOARD, COMPLETE	
* 152	3-922-150-01	SHEET (EV), INSULATING	
* 153	3-908-640-01	BRACKET (DPT2)	
* 154	1-650-649-11	DPT BOARD	
155	3-364-421-01	BEARING (ROLLER)	
156	3-323-231-11	ROLLER (LOWER)	
157	3-364-508-01	SPRING, COMPRESSION	
158	X-3369-631-1	ARM (NR) ASSY	
159	3-375-290-06	SPRING (DH)	
160	3-341-752-11	WASHER, POLYETHYLENE	
161	X-3369-226-1	ARM (DH) ASSY (2)	
162	X-3369-228-1	ARM (DH2) ASSY (2)	
163	3-364-504-11	ROLLER (RA)	

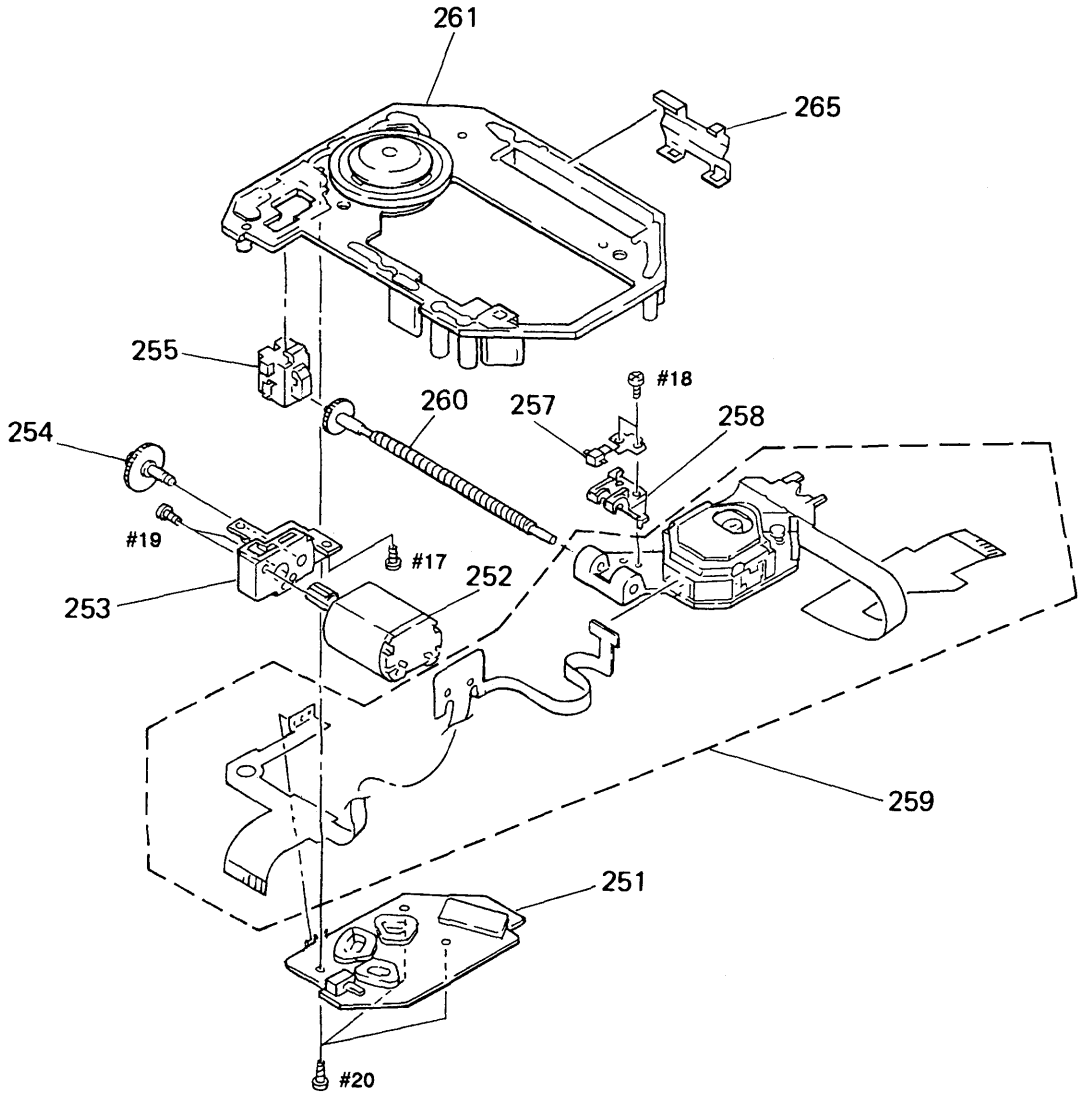
Ref. No.	Part No.	Description	Remark
* 164	3-364-380-11	LEVER, SLIDE	
165	X-3369-524-1	GEAR ASSY (2), ROLLER	
166	3-377-720-01	WASHER, POLYETHYLENE	
167	3-364-506-01	ROLLER (SL)	
168	3-908-497-01	SPRING (GALVANIZED IRON)	
* 169	1-650-650-11	DRIVER BOARD	
170	3-380-759-02	PLATE (C), CHUCK	
171	X-3369-227-1	BRACKET (CP) ASSY (2)	
172	3-371-504-01	SPRING, TENSION	
173	3-701-438-01	WASHER	
174	3-380-963-11	SPACER	
175	3-916-162-01	SPACER	
* 176	3-360-121-31	SPACER (W)	
177	3-913-406-01	SCREW (GROUND)	

(5) MECHANISM DECK SECTION-4



Ref. No.	Part No.	Description	Remark
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
* 202	1-650-648-11	SENSOR BOARD	
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
204	1-643-083-11	MOTOR FLEXIBLE BOARD	
205	3-364-424-02	GEAR (EV)	
206	3-375-551-01	BRACKET (BEARING B)	
207	3-485-239-00	SPRING, COMPRESSION	
208	X-3367-985-1	SLIDER (KR2) ASSY	
209	3-364-417-01	GEAR (L)	
210	3-377-719-01	WASHER, POLYETHYLENE	
211	3-364-422-01	GEAR (K)	
212	X-3364-529-1	LEVER (KRA) ASSY	
213	3-364-419-01	GEAR (R), CAM	
214	3-364-505-01	WHEEL (C), WORM	
215	3-911-088-01	SHAFT (WWR2)	
216	3-911-089-01	WHEEL (R2), WORM	
217	3-701-441-11	WASHER	
218	3-388-479-01	SPRING, COMPRESSION	
219	X-3364-535-3	GEAR (KW) ASSY	
220	3-377-719-11	WASHER, POLYETHYLENE	
221	3-364-418-04	GEAR (SL)	
222	3-308-717-00	SPRING, COMPRESSION	
223	3-910-522-01	WHEEL (2), WORM	
224	3-353-804-01	SPRING, COMPRESSION	
225	3-911-102-01	LOCK (CLAW B)	
226	3-911-087-01	LOCK (CLAW)	
227	3-911-097-01	SHAFT (LOCK 2)	
228	3-912-770-01	BRACKET (EVM2)	
229	3-375-791-02	BEARING (EV)	
230	X-3362-340-7	BRACKET (EV GEAR) ASSY	
* 231	X-3367-984-1	CHASSIS (EV2) ASSY	
232	3-336-274-11	SHIM	
M501	X-3367-983-1	MOTOR ASSY (ELV)	
M502	X-3368-665-1	MOTOR (N) ASSY (DISC LOAD/SAVE)	
PRG401	1-454-580-21	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	

(6) OPTICAL PICK-UP BLOCK KSM-400AAM



Ref. No.	Part No.	Description	Remark
251	8-835-456-01	MOTOR, DC SSC-02E01S	
252	X-2625-210-1	GEAR ASSY, SLED MOTOR	
* 253	2-625-513-01	BASE, DRIVING	
254	2-625-507-01	GEAR (B2)	
* 255	A-4910-348-B	RETAINER ASSY, THRUST	
* 256	2-625-514-01	COVER, FLEXIBLE	
257	2-625-516-01	SPRING (A), FEED	
258	2-625-515-01	RACK (AT)	
⚠259	8-848-310-11	OPTICAL PICK-UP KSS-400A	
260	X-2625-209-1	SCREW ASSY, SLED	
261	X-2625-855-1	OMD CHASSIS ASSY (F) (RP)	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

SECTION 7
ELECTRICAL PARTS LIST

DPT **DRIVER** **JACK** **MD**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			Remark
*	1-650-649-11	DPT BOARD			
		*********			
		< DIODE >			
D451	8-719-045-93	DIODE AN1102W-1-TR (DPT)			
**********					
*	1-650-650-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C501	1-126-204-11	ELECT CHIP	47uF	20%	16V
C502	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNJ501	1-764-436-21	CONNECTOR, FPC 6P			
CNJ502	1-764-621-21	CONNECTOR, FFC/FPC (ZIF) 6P			
		< DIODE >			
D501	8-719-045-93	DIODE AN1102W-1-TR (DOE)			
		< IC >			
IC501	8-759-070-68	IC BA6247FP-Y			
		< JUMPER RESISTOR >			
JR501	1-216-296-00	METAL CHIP	0	5%	1/8W
JR502	1-216-296-00	METAL CHIP	0	5%	1/8W
JR503	1-216-296-00	METAL CHIP	0	5%	1/8W
JR504	1-216-296-00	METAL CHIP	0	5%	1/8W
JR505	1-216-296-00	METAL CHIP	0	5%	1/8W
JR506	1-216-296-00	METAL CHIP	0	5%	1/8W
		< RESISTOR >			
R501	1-216-045-00	METAL CHIP	680	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref.No.	Part No.	Description			Remark
*	1-655-854-11	JACK BOARD			
		**********			
	3-920-134-01	ARM (GROUND)			
		< CAPACITOR >			
C951	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C952	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C953	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C954	1-124-360-00	ELECT	1000uF	20%	16V
		< CONNECTOR >			
CNJ951	1-565-411-21	SOCKET, CONNECTOR 14P			
* CNJ952	1-566-004-11	PIN, CONNECTOR (PC BOARD) 7P			
* CNJ953	1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P			
		< IC >			
IC951	8-749-923-53	IC TOTX193			
		< IC LINK >			
IC952	1-532-686-21	LINK, IC			
		< RESISTOR >			
R951	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
		< SWITCH >			
SW951	1-572-598-11	SWITCH, SLIDE (DIGITAL/ANALOG)			
**********					
*	A-3298-571-A	MD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-209-00	CERAMIC CHIP	0.0015uF	5%	50V
C102	1-163-317-11	CERAMIC CHIP	180PF	5%	50V
C103	1-128-440-11	ELECT	10uF	20%	50V
C201	1-163-209-00	CERAMIC CHIP	0.0015uF	5%	50V
C202	1-163-317-11	CERAMIC CHIP	180PF	5%	50V
C203	1-128-440-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remark
C301	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C302	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C303	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C305	1-124-257-00	ELECT	2.2uF	20%	50V
C306	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C307	1-124-257-00	ELECT	2.2uF	20%	50V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C310	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C312	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C313	1-128-440-11	ELECT	10uF	20%	50V
C314	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C315	1-128-426-11	ELECT	47uF	20%	16V
C316	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C320	1-128-426-11	ELECT	47uF	20%	16V
C321	1-128-426-11	ELECT	47uF	20%	16V
C651	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C652	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C654	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C655	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C656	1-125-701-11	CAP, DOUBLE LAYER			0.047F
C657	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C658	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C901	1-128-426-11	ELECT	47uF	20%	16V
C902	1-128-426-11	ELECT	47uF	20%	16V
C904	1-124-589-11	ELECT	47uF	20%	16V
C905	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C906	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C907	1-124-589-11	ELECT	47uF	20%	16V
C908	1-126-301-11	ELECT	1uF	20%	50V
C909	1-124-589-11	ELECT	47uF	20%	16V
C910	1-124-589-11	ELECT	47uF	20%	16V
C911	1-124-360-00	ELECT	1000uF	20%	16V
C912	1-128-426-11	ELECT	47uF	20%	16V
C917	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C918	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C919	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C920	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C921	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C922	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C923	1-163-038-00	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

CNJ901	1-766-317-11	CONNECTOR, FFC/FPC (ZIF) 30P	
CNJ902	1-565-411-21	SOCKET, CONNECTOR 14P	
* CNP651	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P	

Ref. No.	Part No.	Description		Remark
		< DIODE >		
D301	8-719-801-78	DIODE	1SS184	
D651	8-719-975-40	DIODE	RB411D	
D652	8-719-106-08	DIODE	RD6.2M-B2	
D653	8-719-106-08	DIODE	RD6.2M-B2	
D654	8-719-975-40	DIODE	RB411D	
D655	8-719-975-40	DIODE	RB411D	
D901	8-719-210-33	DIODE	EC10DS2	
D902	8-719-210-33	DIODE	EC10DS2	
D903	8-719-801-78	DIODE	1SS184	
D904	8-719-106-08	DIODE	RD6.2M-B2	
D905	8-719-105-99	DIODE	RD6.2M-B1	
D906	8-719-038-48	DIODE	1SS319(TE85R)	
D907	8-719-801-78	DIODE	1SS184	
		< IC >		
IC301	8-759-185-27	IC	PCM1710U-A	
IC302	8-759-064-92	IC	NJM5532M-D	
IC305	8-759-284-66	IC	TA78M08F(TE16L)	
IC652	8-759-040-83	IC	BA6287F	
IC653	8-759-097-36	IC	RH5VA40AA	
IC654	8-759-284-87	IC	MM1284XFFE	
IC901	8-759-604-29	IC	M5F7805L	
IC902	8-759-054-12	IC	PQ09RA1	
		< COIL >		
L301	1-410-373-31	INDUCTOR CHIP	2.2uH	
L302	1-410-381-11	INDUCTOR CHIP	10uH	
		< TRANSISTOR >		
Q302	8-729-027-52	TRANSISTOR	DTC124EKA-T146	
Q303	8-729-027-52	TRANSISTOR	DTC124EKA-T146	
Q901	8-729-016-83	TRANSISTOR	2SB1446	
Q902	8-729-027-52	TRANSISTOR	DTC124EKA-T146	
Q903	8-729-808-01	TRANSISTOR	2SD1622-S	
Q904	8-729-027-31	TRANSISTOR	DTA124EKA-T146	
Q905	8-729-230-49	TRANSISTOR	2SC2712-YG	
		< RESISTOR >		
R101	1-216-210-00	METAL GLAZE	3.3K 2%	1/8W
R102	1-216-219-00	METAL GLAZE	7.5K 2%	1/8W
R103	1-208-499-41	METAL GLAZE	3.6K 2%	1/8W
R104	1-216-174-00	METAL GLAZE	100 2%	1/8W
R105	1-216-238-00	METAL GLAZE	47K 2%	1/8W
R201	1-216-210-00	METAL GLAZE	3.3K 2%	1/8W
R202	1-216-219-00	METAL GLAZE	7.5K 2%	1/8W
R203	1-208-499-41	METAL GLAZE	3.6K 2%	1/8W
R204	1-216-174-00	METAL GLAZE	100 2%	1/8W

MD SENSOR SERVO

Ref. No.	Part No.	Description			Remark
R205	1-216-238-00	METAL GLAZE	47K	2%	1/8W
R301	1-216-043-00	METAL GLAZE	560	5%	1/10W
R302	1-216-121-00	METAL CHIP	1M	5%	1/10W
R313	1-216-222-00	METAL GLAZE	10K	2%	1/8W
R314	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R661	1-216-089-00	METAL CHIP	47K	5%	1/10W
R668	1-216-089-00	METAL CHIP	47K	5%	1/10W
R669	1-216-089-00	METAL CHIP	47K	5%	1/10W
R670	1-216-089-00	METAL CHIP	47K	5%	1/10W
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-049-00	METAL CHIP	1K	5%	1/10W
R903	1-216-089-00	METAL CHIP	47K	5%	1/10W
R904	1-216-077-00	METAL CHIP	15K	5%	1/10W
R905	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R907	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R908	1-216-089-00	METAL CHIP	47K	5%	1/10W
R910	1-218-279-11	METAL GLAZE	12	5%	1/2W
R911	1-218-279-11	METAL GLAZE	12	5%	1/2W
R912	1-218-279-11	METAL GLAZE	12	5%	1/2W
		< RELAY >			
RY301	1-755-081-11	RELAY			
		< SWITCH >			
SW651	1-571-532-21	SWITCH, TACTIL (EJECT)			
SW653	1-692-864-21	SWITCH, PUSH (1 KEY) (LOCK)			
SW654	1-571-958-11	SWITCH, PUSH (1 KEY) (PST)			
SW655	1-571-958-11	SWITCH, PUSH (1 KEY) (LOT)			
		< VIBRATOR >			
X301	1-567-908-11	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-650-648-11	SENSOR BOARD			
		**********			
		< CONNECTOR >			
CNJ401	1-764-437-21	CONNECTOR, FPC 11P			
CNJ402	1-764-436-21	CONNECTOR, FPC 6P			
* CNP401	1-580-055-21	PIN, CONNECTOR 2P			
* CNP402	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
		< DIODE >			
D401	8-719-801-78	DIODE 1SS184			
		< JUMPER RESISTOR >			
JR401	1-216-296-00	METAL CHIP	0	5%	1/8W
JR402	1-216-296-00	METAL CHIP	0	5%	1/8W
JR403	1-216-296-00	METAL CHIP	0	5%	1/8W
JR404	1-216-296-00	METAL CHIP	0	5%	1/8W
		< TRANSISTOR >			
Q401	8-729-804-41	TRANSISTOR 2SB1122-S			
Q402	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q403	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU			
Q404	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU			
		< RESISTOR >			
R401	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R402	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R403	1-216-194-00	METAL CHIP	680	5%	1/8W
		< SWITCH >			
SW401	1-571-754-31	SWITCH, PUSH (1 KEY) (CES)			
**********					
*	A-3298-572-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C20	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C22	1-135-227-11	TANTAL. CHIP	100uF	20%	6.3V
C23	1-135-227-11	TANTAL. CHIP	100uF	20%	6.3V
C24	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C25	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C27	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C28	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C29	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C31	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C32	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C37	1-128-313-11	ELECT CHIP	10uF	20%	16V
C38	1-128-313-11	ELECT CHIP	10uF	20%	16V
C39	1-128-313-11	ELECT CHIP	10uF	20%	16V
C40	1-128-313-11	ELECT CHIP	10uF	20%	16V
C41	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C50	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C51	1-163-087-00	CERAMIC CHIP	4PF		50V
C52	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C701	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C702	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C703	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C704	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C705	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C706	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C707	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C708	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C709	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C713	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C714	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C719	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C740	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C751	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C753	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C754	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C770	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C771	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C772	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C773	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C774	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C775	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C776	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C777	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C778	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C779	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C780	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C781	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNJ1	1-766-767-21	CONNECTOR, FPC 12P			
CNJ2	1-770-352-11	CONNECTOR, FPC 30P			
CNJ3	1-764-439-21	CONNECTOR, FPC 11P			
CNJ4	1-766-767-21	CONNECTOR, FPC 12P			
		< DIODE >			
D701	8-719-801-78	DIODE 1SS184			
		< FERRITE BEAD >			
FB701	1-500-121-21	BEAD, FERRITE (CHIP)			
		< IC >			
IC11	8-752-061-08	IC CXA1571N			
IC21	8-752-351-94	IC CXD2515Q			
IC31	8-752-861-08	IC CXP84332-008Q			
IC32	8-759-253-82	IC AT24C16N-10SI-TR			
IC41	8-752-373-27	IC CXD2512AQ			
IC42	8-759-295-34	IC M5M44400BTP-7			
IC703	8-759-071-79	IC BA6297AFP			
IC704	8-759-701-05	IC NJM2904M			
		< JUMPER RESISTOR >			
JC701	1-216-864-11	METAL CHIP	0	5%	1/16W
JC702	1-216-864-11	METAL CHIP	0	5%	1/16W
JC703	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
		< PHOTO INTERRUPTER >			
PH11	8-749-925-02	PHOTO INTERRUPTER SG-223			
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q12	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q13	8-729-807-33	TRANSISTOR 2SB1123-R			
Q14	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q701	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q702	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q703	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q704	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q705	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q711	8-729-807-12	TRANSISTOR 2SD1802-S			
		< RESISTOR >			
R11	1-216-093-00	METAL CHIP	68K	5%	1/10W
R12	1-216-093-00	METAL CHIP	68K	5%	1/10W
R13	1-216-093-00	METAL CHIP	68K	5%	1/10W
R14	1-216-093-00	METAL CHIP	68K	5%	1/10W
R15	1-216-097-00	METAL CHIP	100K	5%	1/10W
R16	1-216-097-00	METAL CHIP	100K	5%	1/10W
R17	1-216-024-00	METAL GLAZE	91	5%	1/10W
R20	1-216-158-00	METAL GLAZE	22	5%	1/8W
R22	1-216-075-00	METAL CHIP	12K	5%	1/10W
R23	1-216-075-00	METAL CHIP	12K	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R26	1-216-073-00	METAL CHIP	10K	5%	1/10W
R35	1-216-097-00	METAL CHIP	100K	5%	1/10W
R36	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R50	1-216-835-11	METAL CHIP	15K	5%	1/16W
R51	1-216-835-11	METAL CHIP	15K	5%	1/16W
R52	1-216-837-11	METAL CHIP	22K	5%	1/16W
R53	1-216-814-11	METAL CHIP	270	5%	1/16W
R57	1-216-073-00	METAL CHIP	10K	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W
R60	1-216-047-00	METAL CHIP	820	5%	1/10W
R61	1-216-047-00	METAL CHIP	820	5%	1/10W
R700	1-216-845-11	METAL CHIP	100K	5%	1/16W
R702	1-216-037-00	METAL CHIP	330	5%	1/10W
R703	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R704	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R705	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R706	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R707	1-216-833-11	METAL CHIP	10K	5%	1/16W
R708	1-216-845-11	METAL CHIP	100K	5%	1/16W
R709	1-216-857-11	METAL CHIP	1M	5%	1/16W
R710	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

SERVO

Ref. No.	Part No.	Description			Remark
R711	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R712	1-216-833-11	METAL CHIP	10K	5%	1/16W
R713	1-216-085-00	METAL CHIP	33K	5%	1/10W
R714	1-216-833-11	METAL CHIP	10K	5%	1/16W
R724	1-216-089-00	METAL CHIP	47K	5%	1/10W
R725	1-216-837-11	METAL CHIP	22K	5%	1/16W
R726	1-216-837-11	METAL CHIP	22K	5%	1/16W
R727	1-216-837-11	METAL CHIP	22K	5%	1/16W
R728	1-216-837-11	METAL CHIP	22K	5%	1/16W
R729	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R730	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R731	1-216-081-00	METAL CHIP	22K	5%	1/10W
R732	1-216-081-00	METAL CHIP	22K	5%	1/10W
R733	1-216-073-00	METAL CHIP	10K	5%	1/10W
R734	1-216-041-00	METAL CHIP	470	5%	1/10W
R735	1-216-837-11	METAL CHIP	22K	5%	1/16W
R736	1-216-035-00	METAL CHIP	270	5%	1/10W
R737	1-216-035-00	METAL CHIP	270	5%	1/10W
R738	1-216-035-00	METAL CHIP	270	5%	1/10W
R739	1-216-841-11	METAL CHIP	47K	5%	1/16W
R740	1-216-841-11	METAL CHIP	47K	5%	1/16W
R741	1-216-841-11	METAL CHIP	47K	5%	1/16W
R750	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R751	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R763	1-216-841-11	METAL CHIP	47K	5%	1/16W
R764	1-216-049-00	METAL CHIP	1K	5%	1/10W
R765	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R770	1-216-837-11	METAL CHIP	22K	5%	1/16W
R771	1-216-837-11	METAL CHIP	22K	5%	1/16W
R772	1-216-837-11	METAL CHIP	22K	5%	1/16W
R773	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R774	1-216-083-00	METAL CHIP	27K	5%	1/10W
R776	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R777	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R778	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R779	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R780	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R781	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R782	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R783	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R784	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R785	1-216-833-11	METAL CHIP	10K	5%	1/16W
R786	1-216-833-11	METAL CHIP	10K	5%	1/16W
R787	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R788	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R789	1-216-841-11	METAL CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV11	1-223-587-11	RES, ADJ, CARBON 22K	
RV12	1-223-587-11	RES, ADJ, CARBON 22K	
		< THERMISTOR >	
TH701	1-810-510-21	THERMISTOR NTH5G35A472K01TE	
		< VIBRATOR >	
X701	1-760-479-11	VIBRATOR, CERAMIC (8MHz)	

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MISCELLANEOUS

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16	1-655-683-11	JACK FLEXIBLE BOARD	
103	1-655-683-11	JACK FLEXIBLE BOARD	
123	1-655-682-11	ELEVATOR FLEXIBLE BOARD	
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
204	1-643-083-11	MOTOR FLEXIBLE BOARD	
251	8-835-456-01	MOTOR, DC SSC-02E01S	
⚠259	8-848-310-11	OPTICAL PICK-UP KSS-400A	
J1, J2	1-751-253-11	CORD (WITH CONNECTOR)	
M501	X-3367-983-1	MOTOR ASSY (ELV)	
M502	X-3368-665-1	MOTOR (N) ASSY (DISC LOAD/SAVE)	
M601	X-3367-983-1	MOTOR ASSY (EJECT)	
PRG401	1-454-580-21	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	

****

****

HARDWARE LIST

****

#1	7-621-773-95	SCREW +PTT 2.6X6 (S)
#2	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
#3	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
#4	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT
#5	7-621-255-20	SCREW +PTT 2X4 (S)
#6	7-685-782-01	SCREW +PTT 2X5 (S)
#8	7-627-554-07	SCREW, PRECISION +P 2X2.2
#9	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
#11	7-624-104-04	STOP RING 2.0, TYPE -E
#12	7-627-554-37	SCREW, PRECISION +P 2X1.8 TYPE1
#13	7-624-102-04	STOP RING 1.5, TYPE -E
#14	7-627-553-27	SCREW, PRECISION +P 2X2.5
#16	7-621-259-25	SCREW +P 2.6X4
#17	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE3

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
#18	7-627-852-17	+P 1.7X4	
#19	7-628-253-15	SCREW +PS 2X5	
#20	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT	

****

ACCESSORIES & PACKING MATERIALS
****

1-590-519-21 CORD (WITH CONNECTOR)
1-590-874-11 CORD, CONNECTION
3-339-410-01 COVER (2), PIN JACK
3-798-558-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH) (AEP, UK)

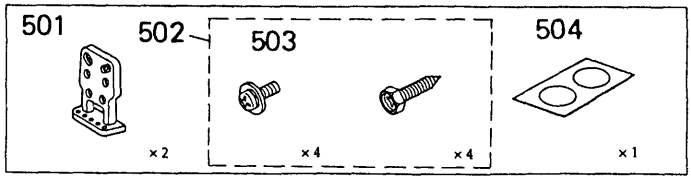
3-798-558-21 MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (US, Canadian, E)
3-798-558-41 MANUAL, INSTRUCTION (SPANISH, SWEDISH, PORTUGUESE, DANISH, FINNISH) (AEP, UK)
4-875-574-00 SHEET, PROTECTION

X-3368-803-1 MAGAZINE (450) ASSY

****

MOUNTING HARDWARE
****

501 3-922-194-01 BRACKET (91)
502 X-3364-512-1 SCREW ASSY
503 7-682-662-09 SCREW +PSW 4X10
504 3-375-509-21 LABEL (FITTING HOLE)



CDX-91

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject: • **Change of IC31 (SERVO BOARD)**
CXP84332-008Q (FORMER) ➡ CXP84332-014Q (NEW)
~~• Correction and changed parts.~~ **Revised**

(ECN-CS501328)

Revised

• ELECTRICAL PARTS LIST

Page	Ref. No.	FORMER TYPE	NEW TYPE
		Part No. Description	Part No. Description
42		*1-655-854-11 JACK BOARD	*1-655-854-13 JACK BOARD *3-338-604-01 SHEET, PROTECTION (IC951)
43	C300	————	1-163-038-00 CERAMIC CHIP 0.1μF 25V
	C301	1-163-235-11 CERAMIC CHIP 22PF 5% 50V	1-163-227-11 CERAMIC CHIP 10PF 0.5PF 50V
	C325	————	1-163-077-00 CERAMIC CHIP 0.1μF 10% 25V
	C326	————	1-163-038-00 CERAMIC CHIP 0.1μF 25V
	C327	————	1-163-133-00 CERAMIC CHIP 470PF 5% 50V
	FB302	————	1-414-235-11 INDUCTOR, FERRITE BEAD
	FB303	————	1-414-235-11 INDUCTOR, FRRRITE BEAD
	FB304	————	1-500-121-21 BEAD, FERRITE (CHIP)
	JC301	————	1-216-296-00 CONDUCTOR, CHIP (3216)
	L301	1-410-373-31 INDUCTOR CHIP 2.2μH	DELETE
	Q303	8-729-027-52 TRANSISTOR DTC124EKA-T146	DELETE
44	R301	1-216-043-00 METAL GLAZE 560 5% 1/10W	1-216-035-00 METAL GLAZE 270 5% 1/10W
		*A-3298-572-A SERVO BOARD, COMPLETE	*X-3370-723-1 SERVO BOARD, COMPLETE
45	FB701	1-500-121-21 BEAD, FERRITE (CHIP)	DELETE
	FB702	————	1-414-234-11 INDUCTOR, FERRITE BEAD
	FB703	————	1-414-234-11 INDUCTOR, FERRITE BEAD
	FB704	————	1-414-234-11 INDUCTOR, FERRITE BEAD
	IC31	8-752-861-08 IC CXP84332-008Q	8-752-868-46 IC CXP84332-014Q
	R736	1-216-035-00 METAL CHIP 270 5% 1/10W	DELETE
	R737	1-216-035-00 METAL CHIP 270 5% 1/10W	DELETE
	R738	1-216-035-00 METAL CHIP 270 5% 1/10W	DELETE
	RV11	1-223-587-11 RES, ADJ, CARBON 22K	1-238-091-11 RES, ADJ CERMET 22K
	RV12	1-223-587-11 RES, ADJ, CARBON 22K	1-238-091-11 RES, ADJ CERMET 22K

• Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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Quality Engineering Dept.

DIAGRAMS

• PRINTED WIRING BOARD

• Semiconductor Location

Ref. No.	Location
D301	B-13
D401	K-16
D451	H-21
D501	I-14
D651	E-12
D652	E-12
D653	E-11
D654	E-12
D655	E-11
D701	B-5
D901	C-16
D902	C-16
D903	D-15
D904	D-15
D905	F-15
D906	F-14
D907	F-15
IC11	D-2
IC21	E-3
IC31	C-6
IC32	B-4
IC41	E-5
IC42	E-6
IC301	D-11
IC302	B-11
IC305	D-15
IC501	I-13
IC652	G-16
IC653	F-10
IC654	F-11
IC703	F-3
IC704	G-7
IC901	C-16
IC902	D-16
IC951	C-20
IC952	D-19
Q11	D-3
Q12	G-5
Q13	F-8
Q14	E-7
Q302	A-13
Q401	K-16
Q402	K-17
Q403	K-16
Q404	J-20
Q701	C-8
Q702	B-8
Q703	F-7
Q704	F-7
Q705	B-3
Q711	F-6
Q901	C-16
Q902	B-10
Q903	F-15
Q904	E-15
Q905	D-15

Note
- ○——: parts extracted from the component side.
- ●: Through hole.
- ▒▒▒: Pattern from the side which enables seeing.

【SERVO BOARD】

【MD BOARD】

【JACK BOARD】

【JACK FLEXIBLE BOARD】

【ELEVATOR FLEXIBLE BOARD】

【DPT BOARD】

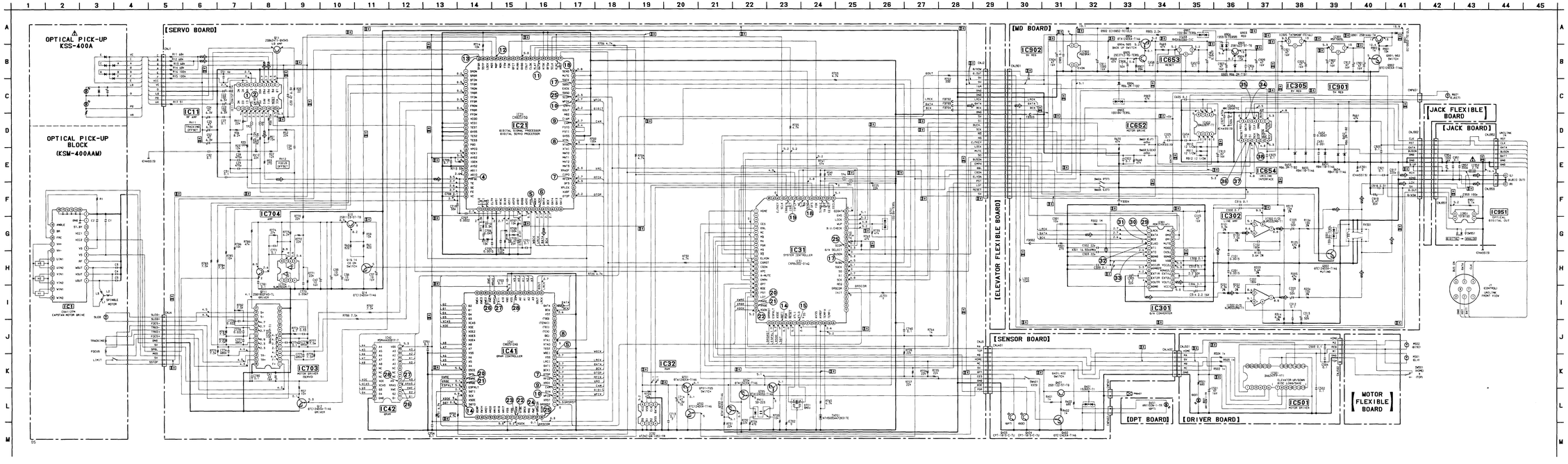
【SENSOR BOARD】

【DRIVER BOARD】

【MOTOR FLEXIBLE BOARD】

— OPTICAL PICK-UP BLOCK — KSM-400AAM

• SCHEMATIC DIAGRAM
• Refer to 13 for Waveforms and 26 IC block diagrams on original service manual.



NOTE
- All capacitors are in μF unless otherwise noted. pF: μμF. 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- (parts) designation.

Note:	Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- -B+ Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions, no mark: CD PLAY
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Power voltage is fed from the CD changer controller.
- Signal path. ⇨ : CD

CDX-91

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-2

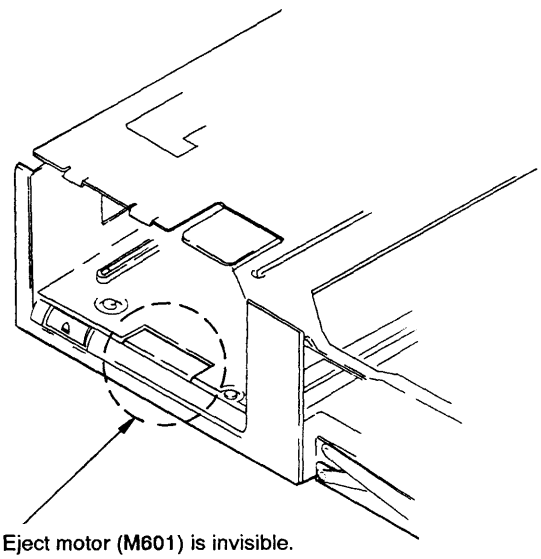
File this supplement with the service manual.

Subject: Mechanism Deck Modification

(ENG-95012)

The mechanism deck was changed from MG-108K-132 to MG-108Z-132.
This supplement contains only a new type mechanism deck.
No circuit is changed, and therefore for electrical parts, please refer to the CDX-91 service manual (9-959-959-11) previously issued.

- **New Type Discrimination**



Former type: Eject motor (M601) is invisible.
New type : Eject motor (M601) is visible.

MECHANISM DECK MODIFICATION

• EXPLODED VIEWS

NOTE:

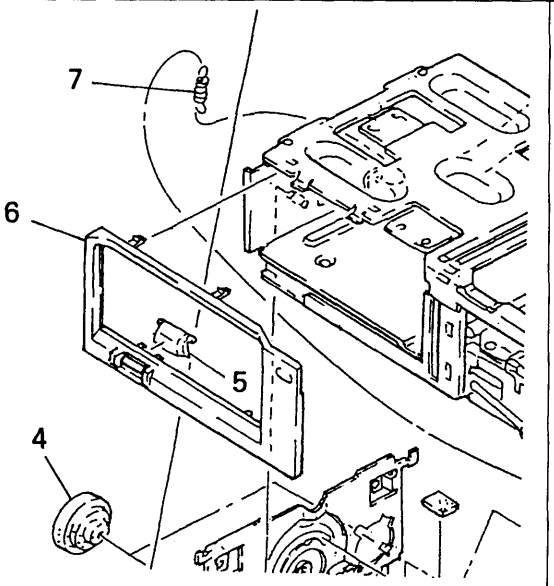
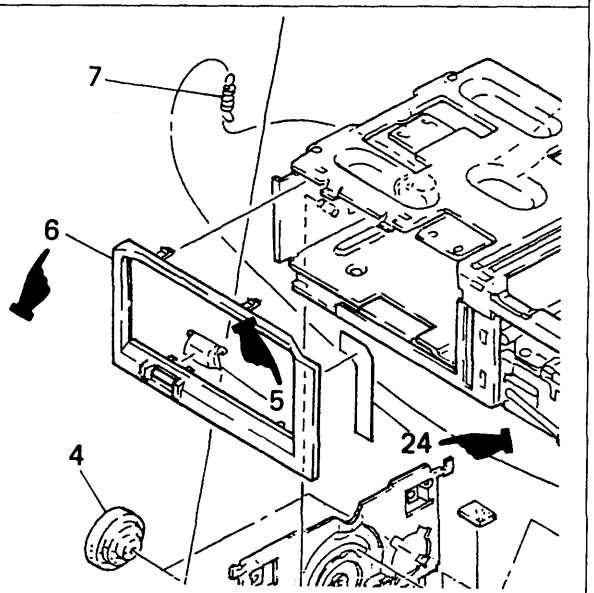
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

• HARDWARE LIST

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#5	7-685-781-09	SCREW +PTT 2X4 (S)	
#6	7-685-782-01	SCREW +PTT 2X5 (S)	
#8	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#9	7-685-104-19	SCREW +P 2X6 TYPE 2 NON-SLIT	
#11	7-624-104-04	STOP RING 2.0, TYPE -E	
#12	7-627-554-37	SCREW, PRECITION +P 2X1.8 TYPE 1	
#13	7-624-102-04	STOP RING 1.5, TYPE -E	
#14	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#16	7-621-259-25	SCREW +P 2.6X4	
#21	7-621-255-10	SCREW +P 2X3	
#23	7-627-554-58	SCREW +P 2X2.8	

(1) CABINET SECTION

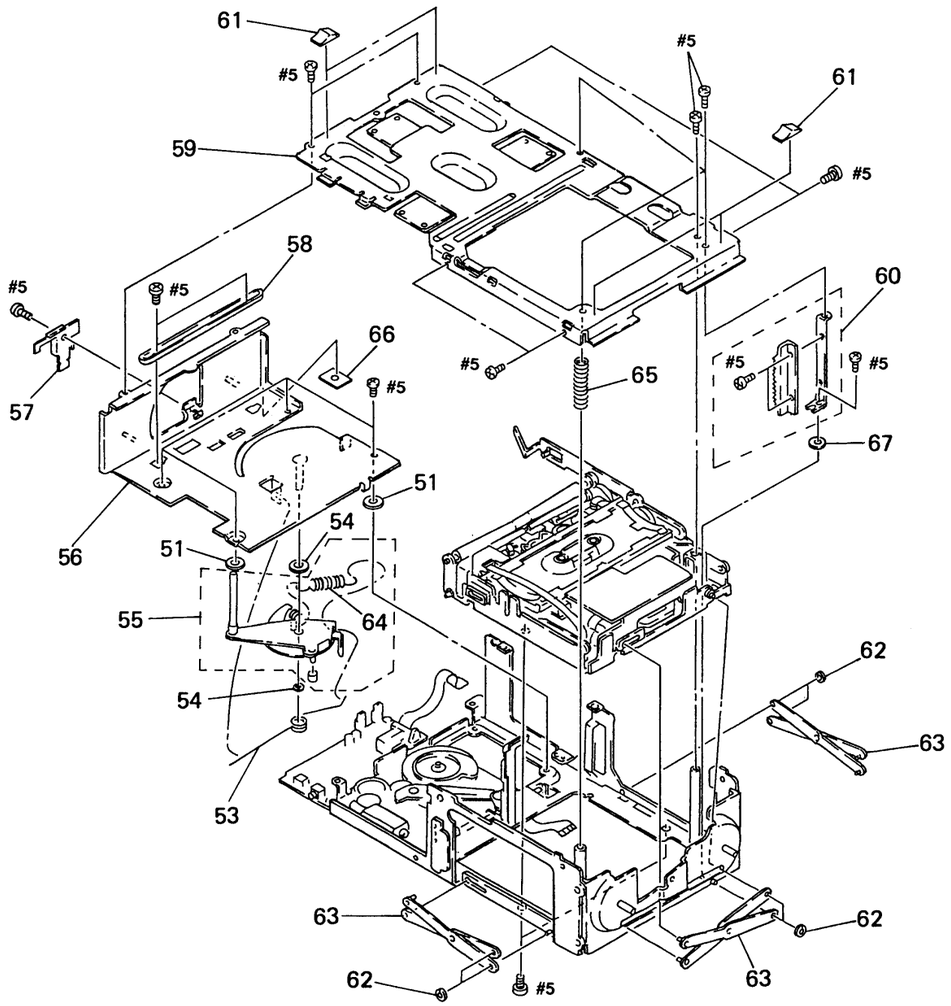
☛ : Difference portion

Page	Former Type	New Type
36		

Ref. No.	Part No.	Description
5	3-388-592-01	BUTTON (EJ2)
6	* 3-388-593-01	ESCUTCHEON (2)
24	———	

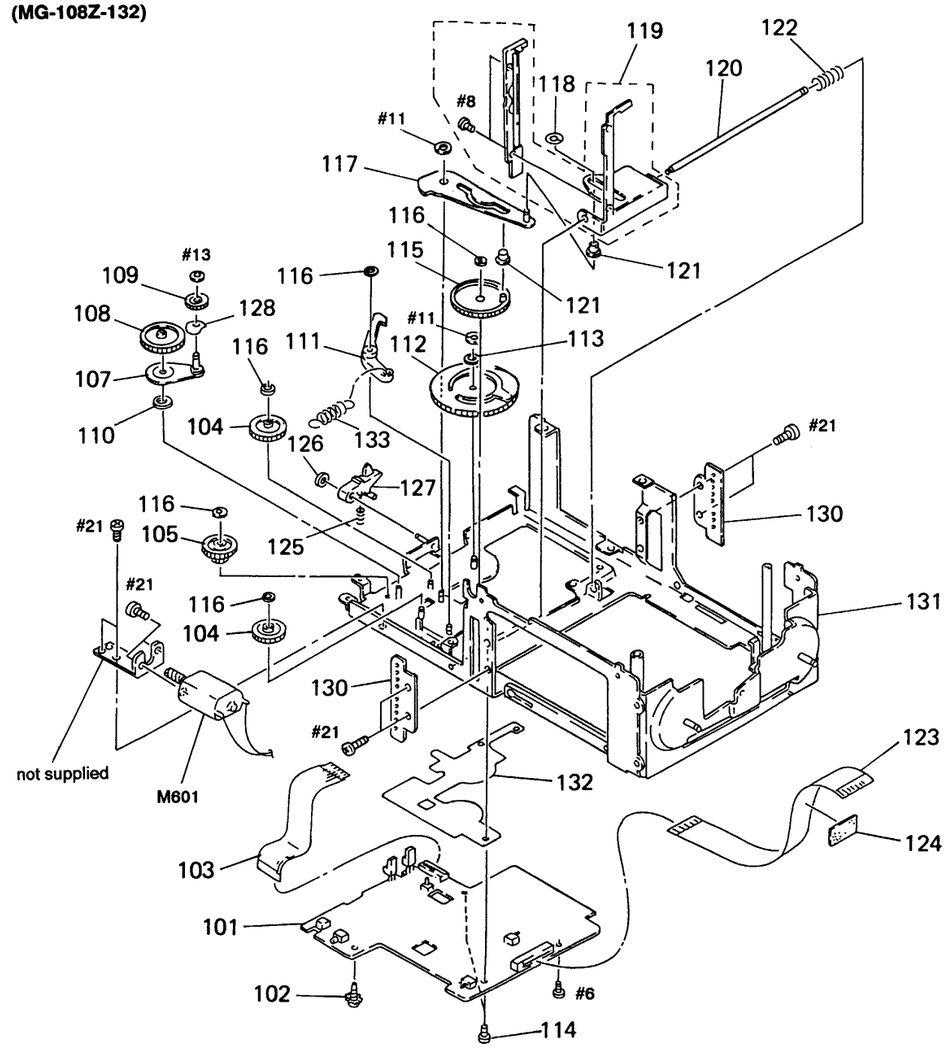
Part No.	Description
3-364-437-01	BUTTON (EJ) (⏏)
* 3-364-436-01	ESCUTCHEON
3-372-331-11	SHEET (ESCUTCHEON)

(2) MECHANISM DECK SECTION - 1
(MG-108Z-132)



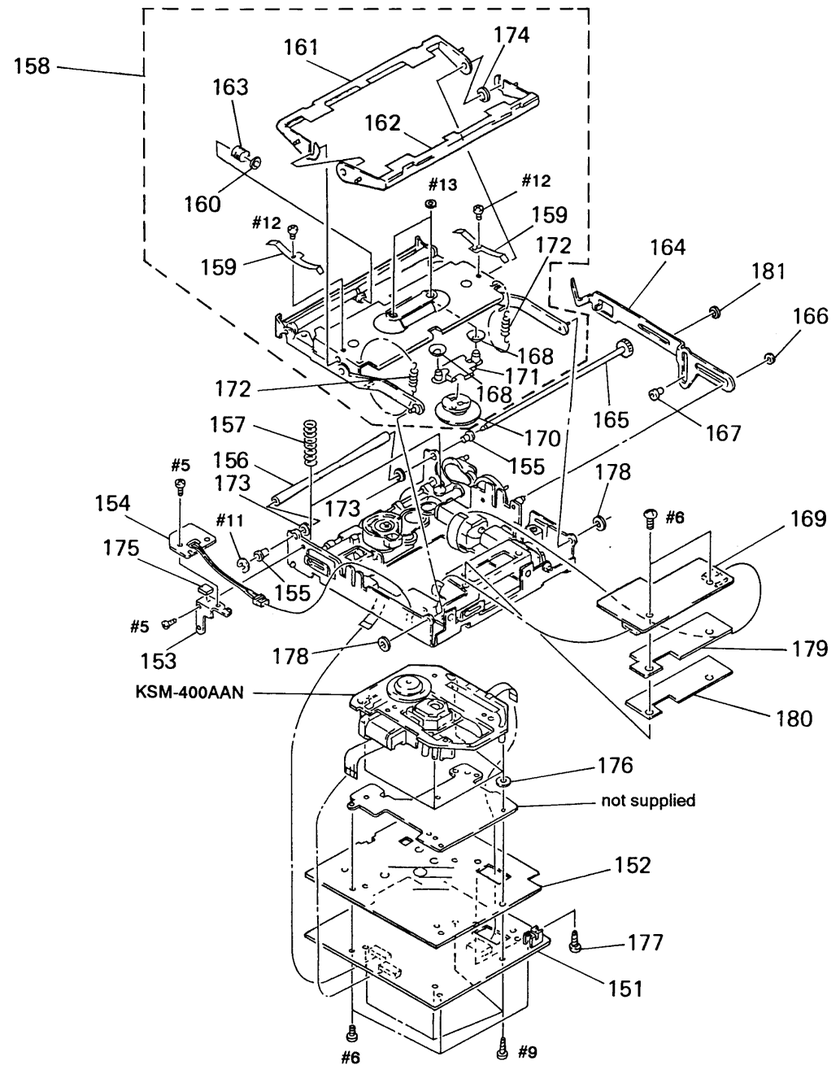
Ref. No.	Part No.	Description	Remark
* 51	3-360-121-31	SPACER (W)	
53	3-364-478-01	SPRING (EJ)	
54	3-377-720-01	WASHER, POLYETHYLENE	
* 55	X-3371-171-1	LEVER (EJZ) ASSY	
* 56	X-3371-145-1	CHASSIS (MZS) ASSY	
* 57	3-918-830-11	BRACKET (TR)	
* 58	3-364-434-01	GUIDE (MZ)	
* 59	X-3371-094-1	COVER (MDS) ASSY	
60	X-3362-488-1	RACK ASSY	
61	3-748-750-01	CUSHION (DAMPER)	
62	3-377-719-01	WASHER, POLYETHYLENE	
* 63	X-3362-348-1	LEVER (X) ASSY	
64	3-568-814-00	SPRING, TENSION	
65	3-370-364-01	SPRING, COMPRESSION	
* 66	3-386-476-01	TAPE (FLEXIBLE)	
* 67	3-360-121-11	SPACER (W)	

(3) MECHANISM DECK SECTION - 2
(MG-108Z-132)



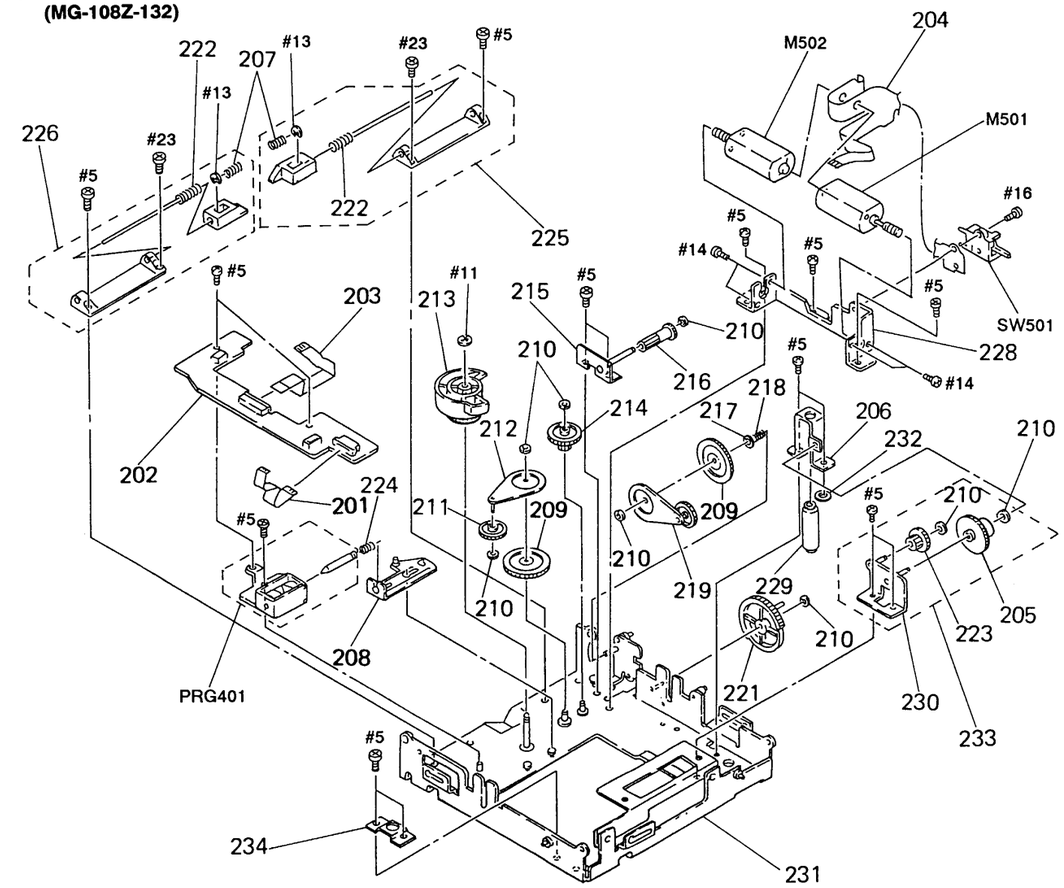
Ref. No.	Part No.	Description	Remark
* 101	A-3298-571-A	MD BOARD, COMPLETE	
102	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
103	1-655-683-11	JACK FLEXIBLE BOARD	
104	3-364-420-01	GEAR (M)	
105	3-364-413-01	WHEEL (B), WORM	
* 107	X-3362-328-1	LEVER (KMZ) ASSY	
108	3-364-417-01	GEAR (L)	
109	3-364-415-01	GEAR (KS)	
110	3-316-308-11	WASHER	
111	3-364-433-01	STOPPER (DR)	
112	3-912-309-01	GEAR (EJ4), CAM	
113	3-373-013-01	SPRING (EJ CAM)	
114	3-913-406-01	SCREW (GROUND)	
* 115	3-364-432-01	GEAR (DR)	
116	3-377-719-11	WASHER, POLYETHYLENE	
* 117	X-3362-329-1	LEVER (DR) ASSY	
118	3-379-490-11	WASHER, POLYETHYLENE	
* 119	X-3362-324-1	SLIDER (DR) ASSY	
* 120	3-364-502-01	SHAFT (SDR)	
121	3-364-506-01	ROLLER (SL)	
122	3-568-315-01	SPRING, COMPRESSION	
123	1-655-682-11	ELVATOR FLEXIBLE BOARD	
124	9-911-844-XX	CUTION, BATTERY	
125	3-370-385-01	SPRING, COMPRESSION	
126	3-377-720-11	WASHER, POLYETHYLENE	
127	3-908-794-01	LEVER (T2) (MZ LOCK)	
128	3-364-387-11	SPRING (F)	
* 130	3-364-427-01	CATCHER	
* 131	X-3368-110-1	CHASSIS (MD) ASSY	
* 132	3-386-478-01	SHEET, INSULATING	
133	3-531-866-01	SPRING, TENSION	
M601	X-3371-317-1	MOTOR (MZ) ASSY (EJECT)	

(4) MECHANISM DECK SECTION - 3 (MG-108Z-132)



Ref. No.	Part No.	Description	Remark
* 151	A-3298-572-A	SERVO BOARD, COMPLETE	
* 152	3-922-150-01	SHEET (EV), INSULATING	
* 153	3-368-565-01	BRACKET (DPT)	
* 154	1-650-649-11	DPT BOARD	
155	3-364-421-01	BEARING (ROLLER)	
156	3-323-231-11	ROLLER (LOWER)	
157	3-364-508-01	SPRING, COMPRESSION	
158	X-3371-117-1	ARM (RZ) ASSY	
159	3-375-290-06	SPRING (DH)	
160	3-341-752-11	WASHER, POLYETHYLENE	
161	X-3368-226-2	ARM (DH) ASSY	
162	X-3366-788-2	ARM (DH2) ASSY	
163	3-364-504-11	ROLLER (RA)	
* 164	3-364-380-01	LEVER, SLIDE	
165	X-3362-345-1	GEAR ASSY, ROLLER	
166	3-377-720-01	WASHER, POLYETHYLENE	
167	3-364-506-01	ROLLER (SL)	
168	3-908-497-01	SPRING (GALVANIZED IRON)	
* 169	1-650-650-11	DRIVE BOARD	
170	3-915-913-01	PLATE (CD), CHUCK	
171	X-3367-910-1	BRACKET (CP) (51) ASSY	
172	3-371-504-01	SPRING, TENSION	
173	3-701-438-11	WASHER, 2.5	
174	3-380-963-11	SPACER	
* 175	3-916-162-01	SPACER	
176	3-360-121-31	SPACER (W)	
177	3-913-406-01	SCREW (GROUND)	
178	3-377-719-01	WASHER, POLYETHYLENE	
* 179	3-929-694-01	SPACER (DTK)	
* 180	3-929-695-01	SHEET (DTK)	
181	3-377-720-11	WASHER, POLYETHLENE	

(5) MECHANISM DECK SECTION - 4 (MG-108Z-132)



Ref. No.	Part No.	Description	Remark
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
* 202	1-650-648-11	SENSOR BOARD	
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
204	1-654-938-11	MOTOR FLEXIBLE BOARD	
205	3-364-424-02	GEAR (EV)	
* 206	3-364-401-01	BRACKET (BEARING B)	
207	3-485-239-00	SPRING, COMPRESSION	
* 208	X-3364-531-1	SLIDER (KR) ASSY	
209	3-364-417-01	GEAR (L)	
210	3-377-719-01	WASHER, POLYETHYLENE	
211	3-364-422-01	GEAR (K)	
212	X-3362-342-1	LEVER (KRA) ASSY	
213	3-364-419-01	GEAR (R), CAM	
214	3-364-505-01	WHEEL (C), WORM	
215	X-3362-343-1	BRACKET (WWR) ASSY	
216	3-364-416-01	WHEEL (R), WORM	
217	3-930-298-01	WASHER, 4 DIA. TEFLON	
218	3-388-479-01	SPRING, COMPRESSION	
219	X-3363-690-1	GEAR (KW) ASSY	
221	3-364-418-04	GEAR (SL)	
222	3-308-717-00	SPRING, COMPRESSION	
223	3-910-522-01	WHEEL (2), WORM	
224	3-353-804-01	SPRING, COMPRESSION	
225	X-3362-487-1	LOCK (F) ASSY	
226	X-3362-486-1	LOCK (B) ASSY	
228	3-912-770-01	BRACKET (EVM2)	
* 229	3-364-461-01	BEARING (EV)	
230	X-3362-340-7	BRACKET (EV GEAR) ASSY	
* 231	X-3371-095-1	CHASSIS (EVS) ASSY	
* 232	3-360-121-31	SPACER (W)	
233	X-3367-863-1	GEAR ASSY (2), EV	
* 234	3-364-400-01	BRACKET (BEARING F)	
M501	X-3371-319-1	MOTOR (EV) ASSY (ELEVATOR UP/DOWN)	
M502	X-3371-318-1	MOTOR (LD) ASSY (DISC LOAD/SAVE)	
PRG401	1-454-580-21	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	

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Quality Engineering Dept.

CDX-91

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-3

File this supplement with the service manual.

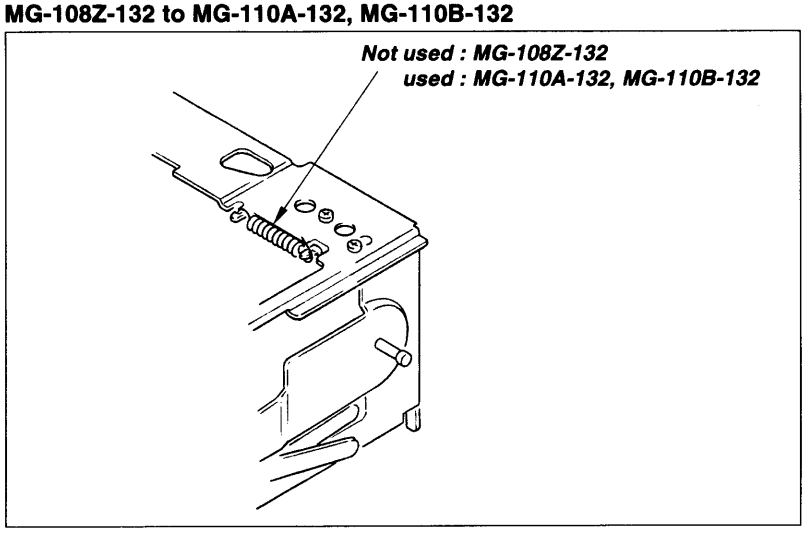
Subject : Mechanism Deck Modification

(ENG-96010)

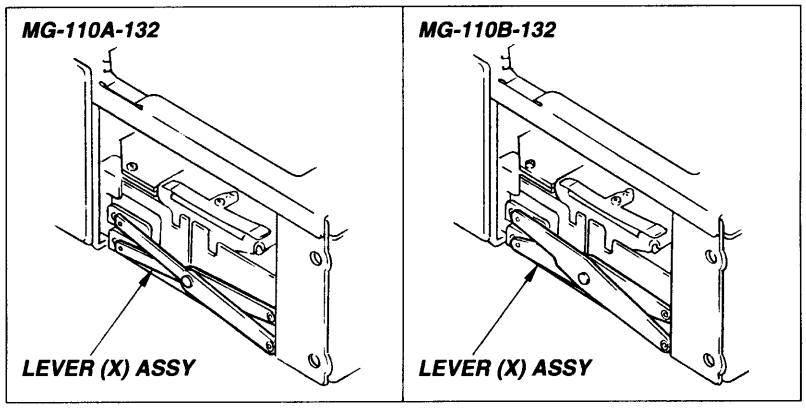
The mechanism deck was changed from MG-108Z-132 to MG-110A-132, MG-110B-132.
This supplement contains only a new type mechanism deck.
No circuit is changed, and therefore for electrical parts, please refer to the CDX-91 service manual (9-959-959-11) previously issued.

- **Mechanism Deck Type Discrimination**

MG-108Z-132 to MG-110A-132, MG-110B-132



MG-110A-132 to MG-110B-132



MECHANISM DECK MODIFICATION

• EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:

  KNOB, BALANCE (WHITE) . . . (RED)

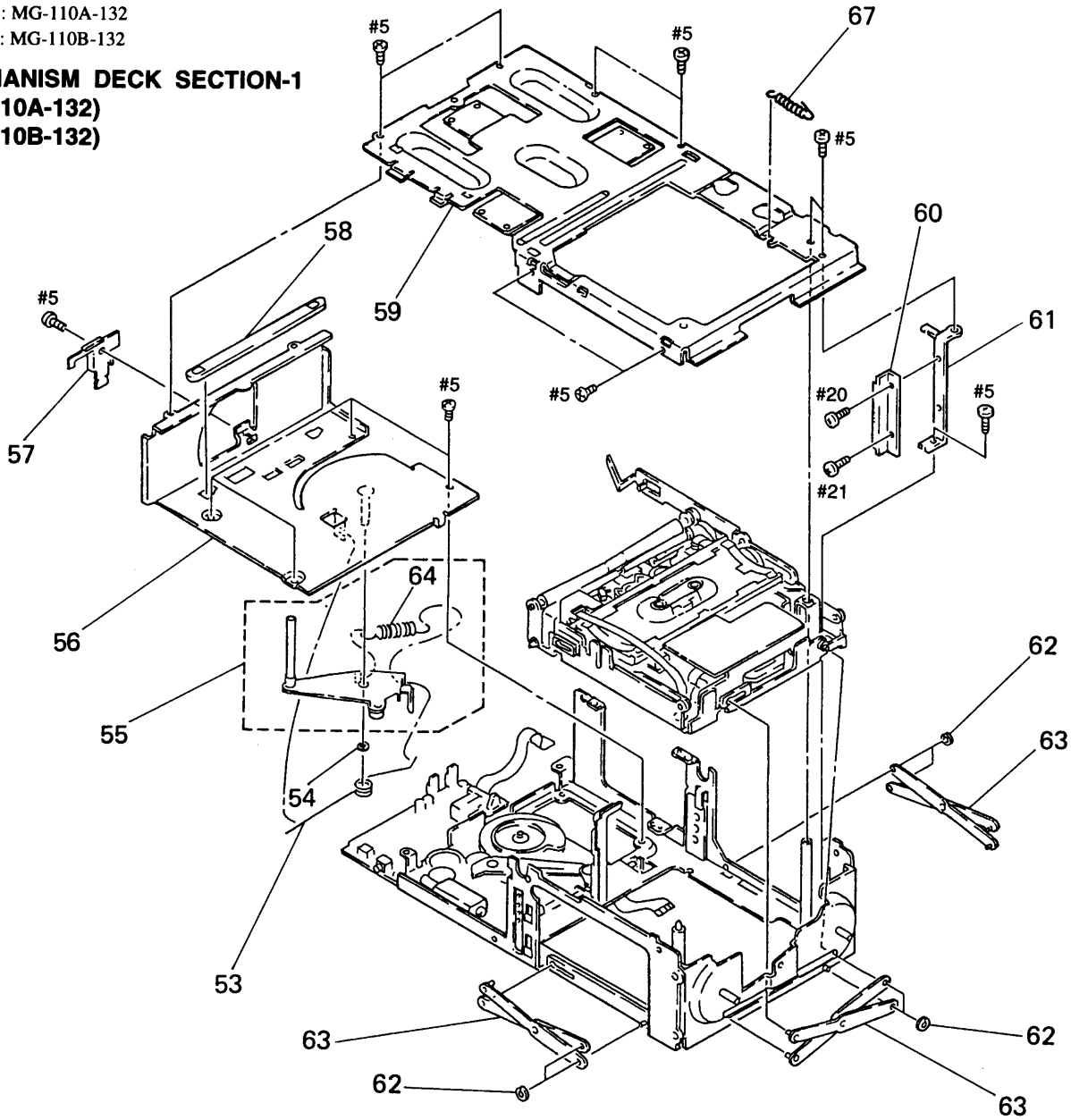
  ↑ ↑

  Parts Color Cabinet's Color
- Abbreviation

  110A : MG-110A-132

  110B : MG-110B-132
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list are given in the last of the electrical parts list.

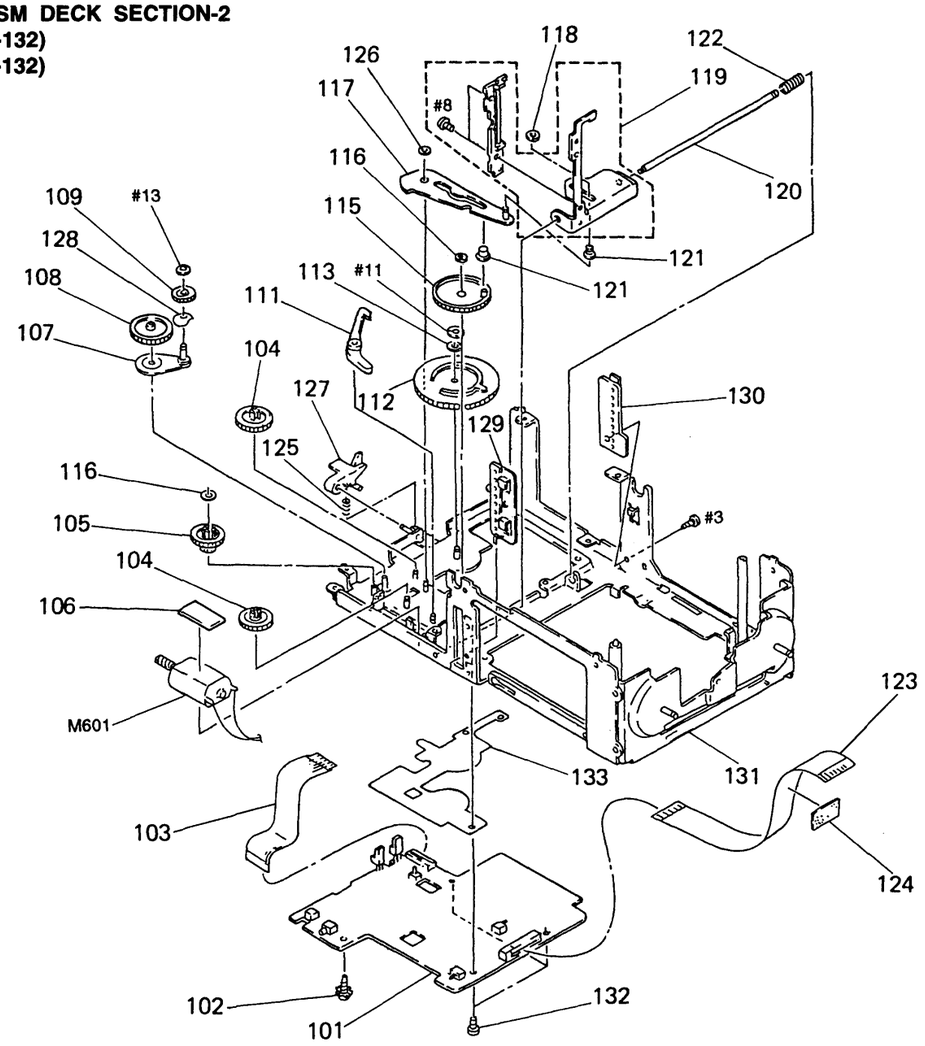
MECHANISM DECK SECTION-1 (MG-110A-132) (MG-110B-132)



Ref. No.	Part No.	Description	Remark
53	3-364-478-01	SPRING (EJ)	
54	3-911-104-01	WASHER	
55	X-3371-264-1	LEVER (NET) ASSY	
* 56	X-3371-263-2	CHASSIS (MZT) ASSY	
* 57	3-918-830-11	BRAKET (TR)	
* 58	3-911-106-01	GUIDE (MZ2)	
* 59	X-3371-266-1	COVER (MDT) ASSY	

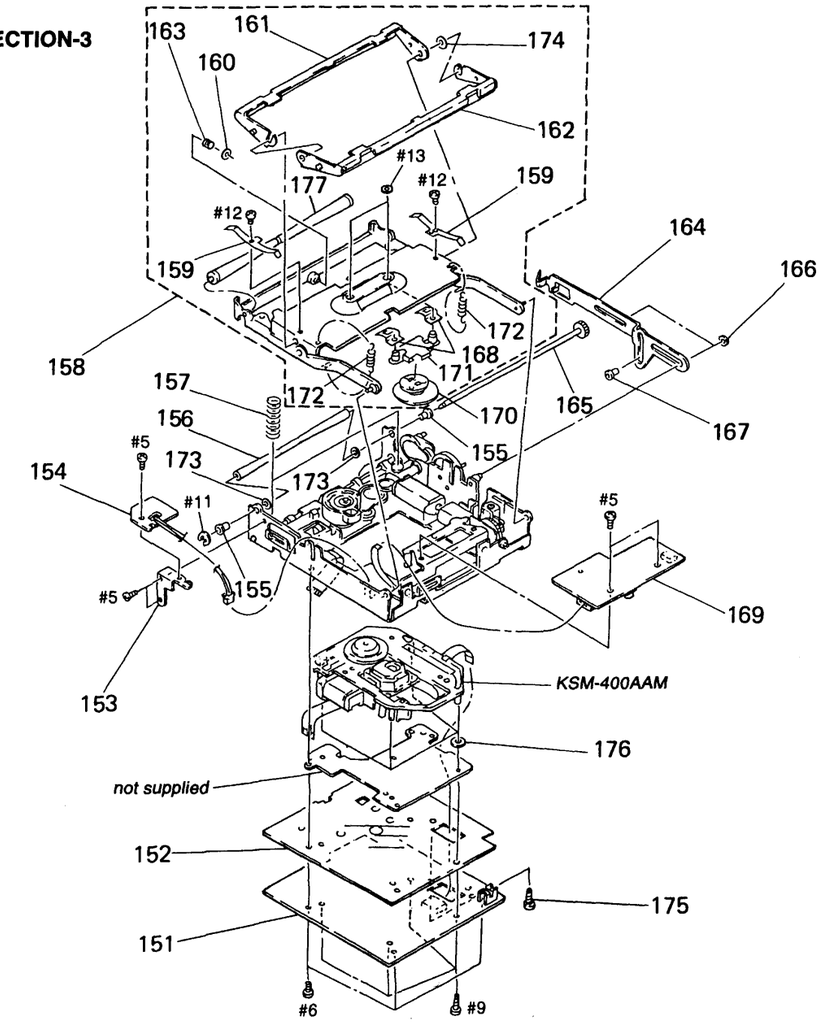
Ref. No.	Part No.	Description	Remark
60	3-930-600-01	RACK (EV)	
61	3-931-453-01	RACK (110)	
62	3-377-719-01	WASHER, POLYETHYLENE	
* 63	X-3362-348-1	LEVER (X) ASSY (110A)	
63	X-3371-384-1	LEVER (X) ASSY (110B)	
64	3-927-978-01	SPRING, TENSION	
67	3-931-995-01	SPRING (EV), TENSION	

MECHANISM DECK SECTION-2
(MG-110A-132)
(MG-110B-132)



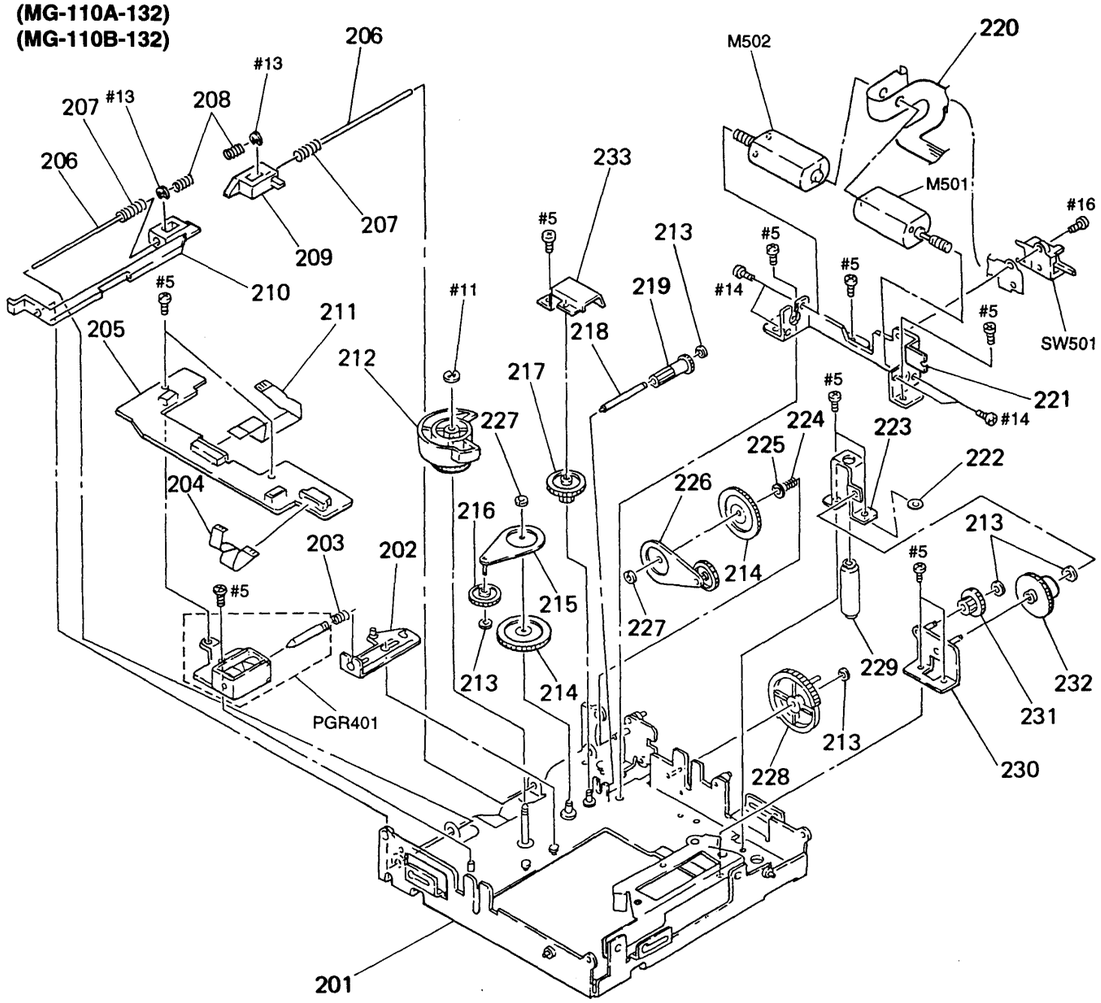
Ref. No.	Part No.	Description	Remark
* 101	A-3298-571-A	MD BOARD, COMPLETE	
102	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
103	1-655-683-11	JACK FLEXIBLE BOARD	
104	3-911-076-02	GEAR (MS)	
105	3-911-090-01	WHEEL (B2), WORM	
106	3-911-105-12	CUSHION (M)	
107	X-3371-253-2	LEVER (KMZT) ASSY	
108	3-911-074-02	GEAR (L2)	
109	3-912-977-01	GEAR (KS2)	
111	3-911-083-01	ARM (DR)	
112	3-912-309-01	GEAR (EJ4), CAM	
113	3-373-013-01	SPRING (EJ CAM)	
115	3-911-096-01	GEAR (DR2)	
116	3-377-719-01	WASHER, POLYETHYLENE	
117	X-3371-256-1	LEVER (DRT) ASSY	
118	3-379-490-11	WASHER, POLYETHYLENE	
119	X-3371-255-1	SLIDER (DRT) ASSY	
* 120	3-911-093-01	SHAFT (SDR2)	
121	3-364-506-01	ROLLER (SL)	
122	3-568-315-01	SPRING, COMPRESSION	
123	1-655-682-11	ELEVATOR FLEXIBLE BOARD	
124	9-911-844-XX	CUSHION, BATTERY	
125	3-927-977-01	SPRING, COMPRESSION	
126	3-377-720-01	WASHER, POLYETHYLENE	
127	3-908-794-01	LEVER (T2) (MZ LOCK)	
128	3-364-387-11	SPRING (F)	
129	3-375-706-03	CATCHER (F)	
130	3-375-707-02	CATCHER (B)	
* 131	X-3371-254-1	CHASSIS (MDT) ASSY	
132	3-913-406-01	SCREW (GROUND)	
133	3-368-567-01	SHEET (MD), INSULATING	
M601	X-3370-179-1	MOTOR (P), ASSY (EJECT)	

MECHANISM DECK SECTION-3
(MG-110A-132)
(MG-110B-132)



Ref. No.	Part No.	Description	Remark
* 151	A-3298-572-A	SERVO BOARD, COMPLETE	
* 152	3-922-150-01	SHEET (EV), INSULATING	
* 153	3-930-565-01	BRACKET (DPTT)	
* 154	1-650-649-22	DPT BOARD (110A)	
* 154	1-659-820-11	DPT BOARD (110B)	
155	3-364-421-01	BEARING (ROLLER)	
156	3-323-231-11	ROLLER (LOWER) (110A)	
156	3-908-447-01	ROLLER (T) (110B)	
157	3-364-508-01	SPRING, COMPRESSION	
158	X-3367-989-8	ARM (NR), ASSY (110A)	
158	X-3372-148-2	ARM (KR) COMPLETE ASSY (110B)	
159	3-375-290-06	SPRING (DH) (110A)	
159	3-929-743-01	SPRING (DH2) (110B)	
160	3-341-752-11	WASHER, POLYETHYLENE	
161	X-3368-226-2	ARM (DH) ASSY (110A)	
161	X-3371-482-1	ARM (DHK) ASSY (110B)	
162	X-3366-788-2	ARM (DH2) ASSY (110A)	
162	X-3371-483-1	ARM (DHK2) ASSY (110B)	
163	3-364-504-11	ROLLER (RA) (110A)	
163	3-932-177-01	ROLLER (RK) (110B)	
* 164	3-364-380-11	LEVER, SLIDE (110A)	
* 164	3-932-163-01	LEVER, SLIDE (110B)	
165	X-3362-345-1	GEAR ASSY, ROLLER	
166	3-377-720-01	WASHER, POLYETHYLENE	
167	3-364-506-01	ROLLER (SL)	
168	3-908-497-01	SPRING (GALVANIZED IRON) (110A)	
168	3-932-166-01	SPRING (GALVANIZED IRON 2) (110B)	
* 169	1-650-650-21	DRIVER BOARD (110A)	
* 169	1-659-819-11	DRIVER BOARD (110B)	
170	3-915-913-01	PLATE (CD), CHUCK	
171	X-3367-910-1	BRACKET (CP) (51) ASSY (110A)	
171	X-3371-484-1	BRACKET (CPK) ASSY (110B)	
172	3-371-504-01	SPRING, TENSION (110A)	
172	3-932-166-01	SPRING (110B)	
173	3-701-438-11	WASHER, 2.5 (110A)	
173	3-701-438-21	WASHER, 2.5 (110B)	
174	3-380-963-11	SPACER	
175	3-913-406-01	SCREW (GROUND)	
* 176	3-360-121-31	SPACER (W)	
177	X-3329-518-1	ROLLER (UPPER) ASSY	

MECHANISM DECK SECTION-4
(MG-110A-132)
(MG-110B-132)



Ref. No.	Part No.	Description	Remark
* 201	X-3371-260-1	CHASSIS (EVT) ASSY	
202	X-3371-261-1	SLIDER (KRT) ASSY	
203	3-353-804-01	SPRING, COMPRESSION	
204	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
* 205	1-650-648-22	SENSOR BOARD (110A)	
* 205	1-659-818-11	SENSOR BOARD (110B)	
206	3-911-097-01	SHAFT (LOCK 2)	
207	3-308-717-00	SPRING, COMPRESSION	
208	3-485-239-00	SPRING, COMPRESSION	
209	3-911-102-01	LOCK (CLAW B)	
210	3-911-087-01	LOCK (CLAW)	
211	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
212	3-364-419-01	GEAR (R), CAM	
213	3-377-719-01	WASHER, POLYETHYLENE	
214	3-364-417-01	GEAR (L)	
215	X-3371-258-2	LEVER (KRAT) ASSY	
216	3-364-422-01	GEAR (K)	
217	3-364-505-01	WHEEL (C), WORM	
218	3-911-088-01	SHAFT (WWR2)	
219	3-911-089-01	WHEEL (R2), WORM	
220	1-659-817-11	MOTOR FLEXIBLE BOARD	
221	3-930-568-01	BRACKET (EVMT)	
222	3-701-441-11	WASHER	
223	3-932-549-01	BRACKET (BEARING BK)	
224	3-388-479-01	SPRING, COMPRESSION	
225	3-930-298-01	WASHER (TEFLON)	
226	X-3371-259-1	GEAR (KWT) ASSY	
227	3-377-719-11	WASHER, POLYETHYLENE	
228	3-364-418-04	GEAR (SL)	
229	3-932-550-01	BEARING (BK)	
230	X-3371-268-1	BRACKET (EVT GEAR) ASSY	
231	3-910-522-01	WHEEL (2), WORM	
232	3-364-424-02	GEAR (EV)	
233	3-930-566-01	COVER (GEAR T)	
M501	X-3367-983-1	MOTOR ASSY (ELEVATOR UP/DOWN)	
M502	X-3368-665-1	MOTOR (N) ASSY (DISC LOADING/SAVE)	
PGR401	1-454-580-21	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	

• HARDWARE LIST

Ref. No.	Part No.	Description	Remark
		********** HARDWER LIST **********	
#3	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#5	7-685-781-09	SCREW +PTT 2X4 (S)	
#6	7-685-782-01	SCREW +PTT 2X5 (S)	
#8	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#9	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#11	7-624-104-04	STOPRING 2.0, TEPE-E	
#12	7-627-554-37	SCREW, PRECISION +P 2X1.8 TYPE 1	
#13	7-624-102-04	STOP RING 1.5, TYPE-E	
#14	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#16	7-621-259-25	SCREW +P 2.6X4	
#20	7-685-102-19	SCREW +P 2X4 TYPE 2 NON-SLIT	
#21	7-685-780-01	SCREW +PTT 2X3, (S)	

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